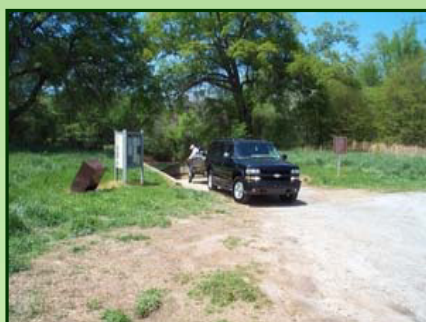
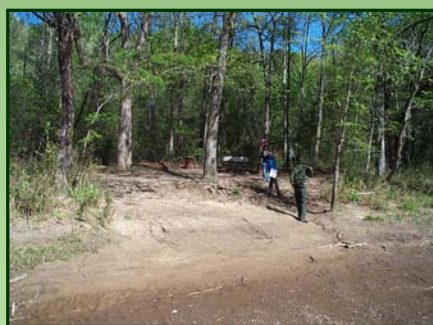
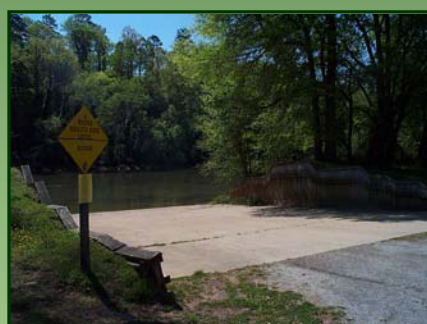
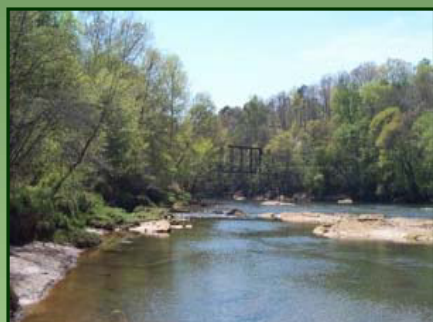
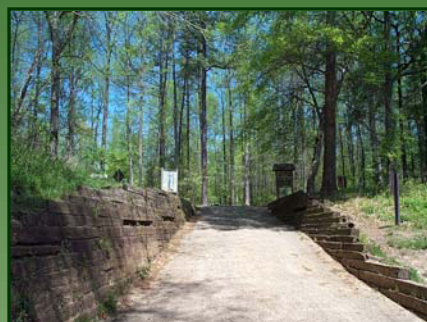




Environmental Assessment Upgrading and Construction of River Access Facilities

January, 2005



SUMMARY

This environmental assessment has been prepared in conjunction with the proposed upgrade or replacement of seven river access facilities in the Chattahoochee River National Recreation Area, Atlanta, Georgia. The purpose of the project is to provide park visitors with improved river access and to minimize further resource degradation that has occurred at the existing access points. The environmental assessment describes the purpose and need for the project, alternatives that were considered, existing conditions at each site, and the effects of the alternatives on natural and cultural resources at each of the seven sites.

Alternatives

Two alternatives were addressed in the environmental assessment:

Alternative A - No Action/Continue Current Management, would continue existing management actions. The park would continue to monitor use and resource degradation at river access points. The NPS would continue to undertake short-term management responses to resource damage resulting from use of existing deteriorating river access points.

Alternative B – Reduce Resource Damage by Improving River Recreation Access, the Preferred Alternative, would be to upgrade and/or replace existing river access facilities at seven sites to protect resources and to improve visitor experience.

The environmentally preferred alternative is identical to the preferred alternative in this environmental assessment, and meets all of the criteria of the National Park Service and the National Environmental Policy Act.

Proposed Project Features

Improvement of the existing facilities would minimize further soil erosion and habitat disturbance at each of the seven access points, and improve the quality of the visitor experience by providing more efficient access to the river. The following is a summary of the proposed improvements:

Settles Bridge: Construction of a step-down ramp, trail constructed from recycled building materials, and recycled crushed concrete parking lot (located at approximate river mile 343.5).

Abbotts Bridge: Replacement of the existing boat ramp and restoration of access road with recycled crushed concrete (river mile 335).

Jones Bridge: Replacement of the existing boat ramp approximately 50 feet upstream of existing ramp and construction of asphalt paved access road (river mile 328.5). Rehabilitation of riverbank habitat at existing boat ramp. Rehabilitation of a second previously existing boat ramp located approximately ½ mile north of existing boat ramp, within the Jones Bridge park unit.

Johnson Ferry North: Removal and replacement of an older abandoned boat ramp with combination boat ramp and step-down ramp. Construction of trails, access road, recycled crushed concrete parking lot, and boardwalk (river mile 311).

Sandy Point at Palisades: Construction of a step-down ramp, trails, and boardwalk. (river mile 306).

Whitewater Creek at Palisades: Construction of a step-down ramp, trails, boardwalk, and recycled crushed concrete parking lot (river mile 304.5).

Paces Mill: Replacement of the existing boat ramp and construction of trails, boardwalk, asphalt paved access road, and viewing platform (river mile 303.5).

Existing Conditions and Effects of Proposed Project

The upland portions of five of the seven sites are characterized by bare soil, grassed field, or previously existing concrete or wooden structures. Construction at the Settles Bridge site would eliminate less than one acre of mature mesic floodplain hardwood forest. Construction at the Jones Bridge site would eliminate less than one acre of forest. The project as a whole would affect a maximum of six acres of previously disturbed land and less than two acres of forested habitat.

The National Park Service conducted field surveys at all seven sites and concluded that none of the areas within the final construction footprints would harbor state- or federally-protected species, wetlands, or cultural resources. At the Settles Bridge and Jones Bridge sites, a total of less than 2 acres of mesic hardwood habitat would be disturbed. The placement of rip-rap and temporary coffer dams in the river would also have minor, short-term adverse effects on aquatic life. The project would therefore have local, and negligible to minor, short-term direct adverse effects on natural resources. Mitigation measures, including temporary coffer dams to control runoff during construction and other best management practices for soil erosion, would be used during construction. These measures would further minimize potentially adverse environmental changes resulting from construction.

Aquatic areas potentially affected by the proposed river access facilities all lie in near-shore shallow water of the Chattahoochee River. The abundance and diversity of aquatic life at each of the seven sites varies according to the location in the river. Higher quality sites are located in the more northern sites. The project would have minor, short-term direct adverse effects on aquatic resources at each site because erosion would be controlled by temporary coffer dams and best management practices, and the total area that would be disturbed would be very limited.

By stabilizing the riverbank in the vicinity of each site, and by prevention of further deterioration of each site, the project would help reduce and minimize soil erosion and habitat degradation that has occurred along the river at each of the seven locations. This would have a moderate, long-term, beneficial, local, direct effect on soils, surface hydrology, watershed characteristics and water quality, and floodplains.

Cumulative effects are defined as those resulting from the combined effect of a proposed project with those of the effects of other past, ongoing and reasonably foreseeable projects in the immediate area. These types of projects were identified and used to make a qualitative assessment of the potential cumulative effects of the proposed project. It

was concluded that the project would have negligible, long-term, cumulative adverse effects on natural resources because it would result in disturbance of a relatively small amount of land (and a less than one acre of forested area) in relation to the effects of all other projects. Because the proposed project would have no effect of any type on cultural resources, it would have no cumulative effect on these resources.

The project would have numerous beneficial effects because it would improve access to the river for visitors. The project would reduce the “wait” time to access the river and relieve crowding in the future, by providing more efficient and safe river access for visitors. The proposed project would also open a previously closed boat ramp at Johnson Ferry. The improvements at all seven sites would also reduce the impacts on natural resources caused by use of non-designated informal trails in these areas of the park. The project would therefore have minor to moderate long-term, local, direct and cumulative beneficial effects on visitor experience and safety, access, recreation, socioeconomics, and quality of the urban environment.

Public Comment

Note to Reviewers and Respondents:

If you wish to comment on this environmental assessment, you may mail comments to the name and address below. This environmental assessment will be on public review for 30 days. Please note that names and addresses of people who comment become part of the public record. If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your comment. We would make all submissions from organizations, businesses, and individuals identifying themselves as representatives or officials of organizations or businesses available for public inspection in their entirety.

Kevin Cheri
Superintendent
Chattahoochee River National Recreation Area
1978 Island Ford Parkway
Atlanta, GA 30350

TABLE OF CONTENTS

	Page
Summary	i
Table Of Contents	Iv
Purpose of and Need for Action	I
Purpose	I
Need	2
Park Purpose And Significance	2
Park Purpose	2
Park Significance	3
Background	3
Previous and Ongoing Planning in the Park	4
Scoping of the Proposed River Access Facilities Project	4
Value Design Analysis	4
Issues And Impact Topics	4
Description Of The Alternatives	13
Alternative A: No Action/Continue Current Management	13
Alternative B: Reduce Resource Damage by Improving River Recreation	
Access, the Preferred Alternative	23
Environmentally Preferred Alternative	29
Alternatives Considered But Not Further Assessed	3I
Mitigation Measures	3I
How the Preferred Alternative Meets The Objectives Of The Proposed Action	3I
Comparison Of The Effects Of The Alternatives	33
Introduction	4I
Affected Environment	4I
Natural Resources	4I
Soils	4I
Surface Hydrology, Watershed Characteristics, and Water Quality	4I
Wetlands and Floodplains	45
Wetlands and Other Waters of the United States	45
Floodplains	46
Aquatic Resources	46
Fish	46
Benthic Invertebrates, Amphibians and Reptiles	48
Terrestrial Ecological Resources	48
Visitor Experience and Safety	50
Visitor Experience	50
Visitor Safety	50
Transportation/Access	50
Recreation	5I
Socioeconomics	52
Quality of the Urban Environment	52

TABLE OF CONTENTS (CONTINUED)

	Page
Environmental Consequences	52
Methodology	52
Definitions Used in Impact Assessment	52
Assumptions Used in Impact Assessment	57
Impairment Analysis Methodology	58
Environmental Impacts Of The Continue Current Management Or No Action/Continue Current Management Alternative	59
Impacts Of No Action/Continue Current Management Alternative On Natural Resources	59
Impacts of Alternative A on Soils	59
Impacts of Alternative A on Surface Hydrology, Watershed Characteristics and Water Quality	60
Impacts of Alternative A on Wetlands and Floodplains	61
Impacts of Alternative A on Aquatic Resources	63
Impacts of Alternative A on Terrestrial Ecological Resources	63
Impacts of Alternative A on Visitor Experience and Safety	64
Impacts of Alternative A on Transportation/Access	65
Impacts of Alternative A on Recreation	66
Impacts of Alternative A on Socioeconomics	66
Impacts of Alternative A on Quality of the Urban Environment	66
Environmental Impacts Of Alternative B – Preferred Alternative	67
Impacts of Alternative B on Soils	67
Impacts of Alternative B on Surface Hydrology, Watershed Characteristics and Water Quality	68
Impacts of Alternative B on Wetlands and Floodplains	70
Impacts of Alternative B: Preferred Alternative on Aquatic Resources	71
Impacts of Alternative B on Terrestrial Ecological Resources	73
Impacts of Alternative B on Visitor Experience and Safety	73
Impacts of Alternative B on Transportation/Access	74
Impacts of Alternative B on Recreation	75
Impacts of Alternative B on Socioeconomics	75
Impacts of Alternative B on Quality of the Urban Environment	75
Consultation and Coordination	77
List of Preparers	78
References	79
Appendix A - List Of Vegetation Observed During The National Park Field Survey (Nps 2004d)	82
Statement of Findings	86

TABLE OF CONTENTS (CONTINUED)

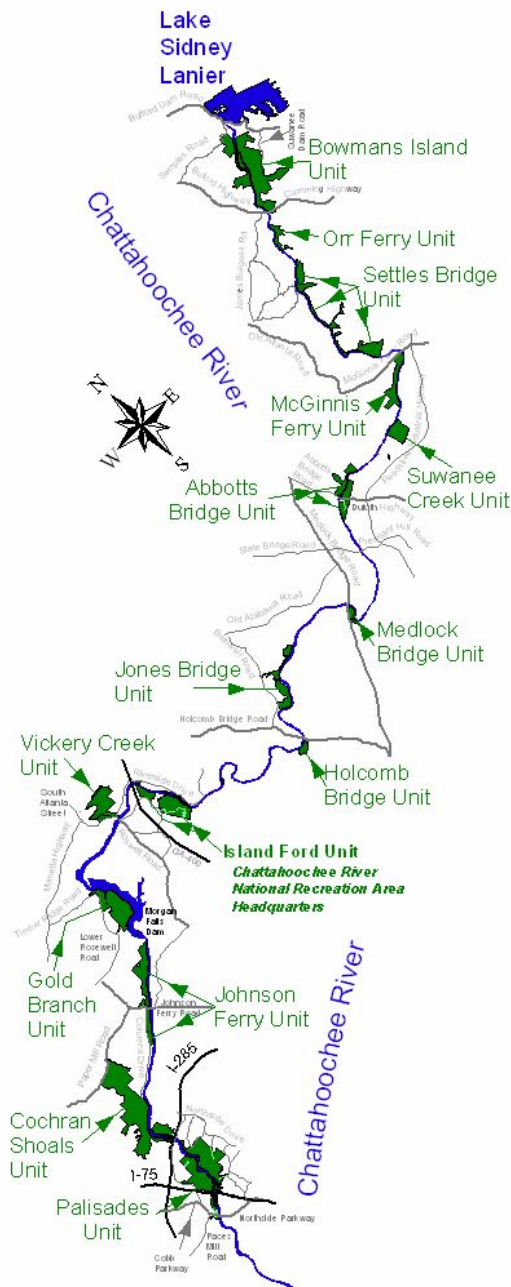
	Page
List of Figures	
Figure 1 Map of Chattahoochee River National Recreation Area	8
Figure 2 Site Plan for Settles Bridge.	9
Figure 3A Site Plan for Abbotts Bridge	10
Figure 3B Site Plan for Abbotts Bridge	11
Figure 3C Site Plan for Abbotts Bridge.	12
Figure 4 Site Plan for Jones Bridge	13
Figure 5A Site Plan for Johnson Ferry North	14
Figure 5B Site Plan for Johnson Ferry North	15
Figure 6 Site Plan for Sandy Point at Palisades	16
Figure 7 Site Plan for Whitewater Creek at Palisades	17
Figure 8 Site Plan for Paces Mill	18
 List Of Tables	
Table 1 Impact Topics Retained or Dismissed	24
Table 2 Chattahoochee River National Recreation Area River Access Facilities - General Construction Features of Alternative B (The Preferred Alternative), Approximate Design Component Footprints, Project Benefits, and Design Options.	32
Table 3 Mitigation Measures and Best Management Practices	
Table 4 Summary of the Impacts of the Alternatives	46
Table 5 Impact Thresholds Used in the Assessment of Effects of the Proposed Project	40

PURPOSE OF AND NEED FOR ACTION

PURPOSE

The purpose of the proposed project is to improve resource conditions, prevent further resource degradation, and enhance visitor experience and safety at seven river access sites within the boundaries of the Chattahoochee River National Recreation Area, located in Atlanta, Georgia (Figure 1). This would be achieved by upgrading river access facilities at seven existing points along the river within the park.

Figure 1
Map of Chattahoochee River National Recreation Area Located in Metropolitan Atlanta



NEED

The existing river access facilities have deteriorated significantly as a result of visitor use. This has also led to an associated localized degradation of river edge habitats and increased levels of soil erosion in the vicinity of each existing access point. The deteriorated river access facilities have also adversely affected the visitor experience in the park by making access points less efficient to use, and less inviting visually and aesthetically. Improvement of existing river access facilities, including ramps, retaining walls, boardwalks, and viewing platforms would help greatly to control and minimize further soil erosion and habitat disturbance at the present river access sites and would also improve the quality of the visitor experience.

This environmental assessment analyzes existing conditions at each of the seven river access sites, describes available alternatives, and assesses the effects of each alternative on the environment. The environmental assessment has been prepared in accordance with the National Environmental Policy Act (National Environmental Policy Act) of 1969 and implementing regulations, 40 CFR Parts 1500-1508; National Park Service Director's Order #12 and Handbook, *Conservation Planning, Environmental Impact Analysis, and Decision-making*; and Section 106 of the National Historic Preservation Act of 1966 as amended, and implementing regulations, 36 CFR Part 800.

PARK PURPOSE AND SIGNIFICANCE

Park Purpose

Congress established the Chattahoochee River National Recreation Area in 1978, and determined that the “natural, scenic, recreation, historic, and other values of a forty-eight-mile segment of the Chattahoochee River and certain adjoining lands in the State of Georgia from Buford Dam downstream to Peachtree Creek are of special national significance, and that such values should be preserved and protected from developments and uses which would substantially impair or destroy them.”

The purposes of the park as defined by the most recent legislation passed on December 9, 1999 (Pub. L. 106-154, Sec. 1, 106 Stat. 1736) are as follows:

“To increase the level of protection of the open spaces within the area of national concern along the Chattahoochee River and to enhance visitor enjoyment of the open spaces by adding land-based linear corridors to link existing units of the recreation area;”

“To ensure that the Chattahoochee River National Recreation Area is managed to standardize acquisition, planning, design, construction, and operation of the linear corridor;” and

“To authorize the appropriation of Federal Funds to cover a portion of the costs of the Federal, State, local, and private cooperative effort to add additional areas to the recreation centers or many other worth while programs offered by these agencies. Rather, the river and the associated lands are to be the resource base upon which the NPS can function to provide opportunities consistent with national park operations.”

The statement of purpose is as follows:

“The purpose of Chattahoochee River National Recreation Area is to lead the preservation and protection of the 48-mile Chattahoochee River corridor from Buford Dam to Peachtree Creek, and its associated natural and cultural resources, for the benefit and enjoyment of the people.”

Park Significance

The significance of the natural and cultural resources in Chattahoochee River National Recreation Area is summarized in the statements that follow.

Geological Significance. The park’s entire 48-mile-long corridor runs along the Brevard Fault Zone, which forms the Chattahoochee River channel. The steep and rocky Palisades section of the park is generally considered to be the best location along the entire Brevard Fault Zone to view and study this major geologic feature.

Biological Significance. The park contains a diverse assemblage of relatively undisturbed mesic hardwood floodplain forests, bluff, and ravine forests, seasonally and temporarily flooded bottomland forested wetlands, and emergent and scrub-shrub wetlands. There are more than 850 species of vascular plants within the park, including species associated with both the southern piedmont and mountain habitats. This number of vascular plants is one of the highest within the National Park Service system. The diverse habitats in the park support numerous rare plants and animals, including both aquatic and terrestrial species.

Significance of Cultural Resources. The park vicinity has been occupied by humans since the Archaic period, approximately 8,000 years ago. Remaining Native American cultural features include rock-shelters, fish weirs, and occupied Native American sites. These sites represent Paleo-Indian, Archaic, Woodland, and historic periods of Native American cultures. There are no similar counterparts in the region. At least six of these archaeological sites are eligible for listing on the National Register of Historic Places. The park also contains numerous historical features from the early American culture. This includes Civil War sites, pre-Civil War home sites and farmhouses, at least 10 early ferry crossings, and pre-Civil War paper mill and woolen mill sites.

Recreational Significance. The park constitutes an important outdoor recreation resource to several million people located in the Atlanta metropolitan area. The park’s green space and the river improve the quality of life by serving as a sanctuary and by providing a variety of outdoor recreation opportunities such as hiking, nature viewing, paddling, boating, and fishing. The Chattahoochee River is inhabited by 22 species of game fish.

BACKGROUND

The Chattahoochee River National Recreation Area extends from Buford Dam to Peachtree Creek, a total distance of approximately 48 miles of river. The park consists of a linear corridor surrounded by developed urban and suburban areas in Metropolitan Atlanta. The National Park Service also has jurisdiction over the river and its bed, regardless of ownership.

The existing river access facilities range from bare earth banks and non-designated, informal trails to deteriorated concrete and timber boat ramps. The boating public is limited to accessing the river through these antiquated and inefficient facilities. Soils along the river bank have been severely compacted and vegetation has been eliminated in these same areas due to visitor over use.

Previous and Ongoing Planning in the Park

A general management plan was published in 1989 to establish and guide the overall management, development, and use of the Chattahoochee River National Recreation Area in ways that best suit visitors while preserving the park's cultural and natural resources. The objective of the general management plan is to support the purpose for which the park was established and to formalize the park's future direction. Since the 1989 plan was prepared, the Atlanta area has grown rapidly, and the four counties that surround the 48-mile Chattahoochee River National Recreation Area are among the fastest growing in the nation. This rapid development has resulted in construction of industrial, commercial, and housing developments close to the narrow, linear park.

Scoping of the Proposed River Access Facilities Project

The Council on Environmental Quality (CEQ 1978) guidelines for implementing the National Environmental Policy Act and the National Park Service National Environmental Policy Act guidelines contained in *Director's Order # 12: Conservation Planning, Environmental Impact Analysis and Decision Making Handbook* (NPS 2001b) require public scoping of federal actions that would require an environmental impact statement. The National Park Service is making a diligent effort to involve the interested and affected public. The National Park Service has relied primarily on internal scoping for this project because of the limited extent of anticipated environmental effects. However, the National Park Service has also invited stakeholder groups to open meetings to inform the public about the project and identify potential concerns. A copy of the draft environmental assessment will be distributed to the review agencies, including the Georgia Department of Natural Resources and US Fish and Wildlife Service, as well as the tribes. The environmental assessment will also be made available to the public at the park web site and at park headquarters.

Value Design Analysis

A Value Design Analysis was conducted to evaluate the proposed river access facilities and further develop the best possible design alternatives from those presented in the conceptual design phase. The final product of this analysis was a design analysis report, which included an outline of specifications, site design documents at a level of completion equivalent to 40 percent complete construction documents, and cost estimates (NPS 2003).

ISSUES AND IMPACT TOPICS

Potential issues and concerns affecting the proposed action were identified based on the existing conditions at each of the river-access sites, and on the specific design and operational features of each facility. The "impact topic" approach was used to assess the potential environmental effects of the alternatives. Impact topics are defined as resources of concern that could be affected by the proposed project alternatives. Numerous candidate impact topics were identified initially based on legislative requirements, executive orders, topics specified in Director's Order #12 and Handbook (NPS 2001b), Management Policies

2001 (NPS 2001a), guidance from the National Park Service, other agencies, public concerns, and resource information specific to Chattahoochee River National Recreation Area. Candidate impact topics were dismissed from further consideration if it was determined that those resources would not be affected, or the potential for impacts under all alternatives would be negligible. The specific rationale for including or excluding impact topics is provided in Table 1. Natural and cultural resources associated with each impact topic are included and described in the Affected Environment, Evaluation Methodology, and Environmental Consequences section of this document.

Table 1
Impact Topics Retained Or Dismissed

Impact Topic	Action - Justification
Geology and Soils	Retained the soils portion of this impact topic - The project would have no adverse effects on the geology of the park. The project would, however, have effects on soils during construction. The Georgia Erosion and Sedimentation Act of 1975, Georgia Erosion and Sedimentation Act (amended 2000), Redwoods Amendment of March 27, 1978 (General Authorities Act), and NPS Management policies direct the Park to restore soils where they have been lost, if feasible. Soils may be affected in different areas due to the construction of the proposed access facilities.
Surface Water Hydrology , Watershed Characteristics and Water Quality	Retained – The construction and operation of the proposed access facilities would require analysis of potential effects to water quality, watershed characteristics, and hydrology.
Wetlands and Floodplains	Retained - Executive Order 11990, Wetland Protection, directs the park to minimize impacts to the natural resources of wetlands. The provisions of Executive Order 11988 of May 24, 1977, Floodplain Management, direct the park to minimize impacts to the natural resources of floodplains. The proposed facilities would be constructed within the 100-year floodplain of the Chattahoochee River, and could potentially affect wetlands. The potential effects on floodplains and wetlands are therefore considered further in this environmental assessment.
Aquatic Resources	Retained – Aquatic life of the river is a productive and sensitive natural resource that could be affected by construction of the proposed access facilities. The project would involve construction in the river and along the river edge. Therefore, this topic was included for further consideration.
Terrestrial Ecological Resources	Retained – Habitat changes in forested areas along the river could occur due to construction of the proposed access facilities. Therefore, this topic was included.
Visitor Experience and Safety	Retained – The new or renovated boat ramps would have an effect on visitor experience. Visitor safety is a major concern in the park.

Table 1 (Continued)
Impact Topics Retained Or Dismissed

Impact Topic	Action - Justification
Transportation/Access	Retained – The project would provide improved access to the river for recreational boaters and hikers. The project could have a negligible effect on transportation patterns or volumes in the park and/or in the surrounding area.
Recreation	Retained – the project would provide modern, state-of-the-art recreational facilities for the park that would replace the existing deteriorating ramps and access points.
Important Scientific, Archeological and Other Cultural Resources Including Historic Properties Listed or Eligible for the National Register of Historic Places	<p>Dismissed cultural resources. Potential impacts to cultural resources (archeological resources, prehistoric or historic structures, cultural landscapes, and traditional cultural properties) either listed in or eligible to be listed in the National Register of Historic Places were identified and evaluated in accordance with the Advisory Council on Historic Preservation’s regulations implementing Section 106 of the National Historic Preservation Act (36 CFR 800, Protection of Historic Properties) by (1) determining the area of potential effects; (2) identifying cultural resources present in the area of potential effects that are National Register listed or eligible; (3) applying the criteria of adverse effect to affected resources; and (4) considering ways to avoid, minimize, or mitigate adverse effects. Under the Advisory Council’s regulations, a determination of no historic properties affected, adverse effect, or no adverse effect must be made for affected National Register listed or eligible cultural resources. The National Historic Preservation Act recognizes five property types: districts, sites, buildings, structures, and objects. To focus attention on management requirements within these property types, National Park Service Management Policies, 2001 categorizes cultural resources as archeological resources, cultural landscapes, structures, museum objects, and ethnographic resources (NPS DO-28).</p> <p>During the week of May 3, 2004, the NPS Southeast Archeological Center (SEAC) conducted a phase I archeological survey of the seven river access locations identified for this undertaking. The purpose of the investigation was to determine the presence of any archeological resources that would potentially be impacted by planned improvements to river access at these areas. The SEAC survey found no archeological resources within the</p>

Table 1 (Continued)
Impact Topics Retained Or Dismissed

Impact Topic	Action - Justification
	<p>area of potential effect at any of the seven river access areas, therefore archeological resources are dismissed as an impact topic in this environmental assessment.</p> <p>The remains of Settles Bridge and its environs have not been evaluated for eligibility for listing on the National Register of Historic Places as a cultural landscape, however, this area may meet National Register criteria as a cultural landscape. The Settles Bridge area is a structure that was important to transportation in the area. The proposed project would formalize and route access trails to the river and would restore some social trails to natural conditions which would have a minor beneficial effect on any potential cultural landscape at Settles Bridge therefore cultural landscapes are dismissed as an impact topic.</p> <p>With the exception of Settles Bridge no historic structures have been identified within the area of potential effect at the other six river access locations. The NPS finds that the skeletal remains of Settles Bridge may meet National Register criteria; however, the project to improve river access at here has been designed to avoid this potential historic property and would have no effect upon it therefore structures are dismissed as an impact topic in this environmental assessment.</p> <p>Museum collections at Chattahoochee NRA are not located within the potential area of effect for this proposed undertaking and would not be affected by this activity, therefore, museum collections are dismissed as an impact topic.</p>
Socioeconomics	Retained - Activities associated with the proposed action could affect local economic conditions such as employment for the construction of the boat ramps.

Table 1 (Continued)
Impact Topics Retained Or Dismissed

Impact Topic	Action - Justification
Endangered or Threatened Plants and Animals and Their Habitats	Dismissed – The Endangered Species Act and Management Policies (NPS 2000c) requires the protection of rare species and their habitats. The Chattahoochee River National Recreation Area provides habitat for several federally endangered species and a large number of species of plants and animals listed by the Georgia Heritage Trust Program. However, a literature review and field survey conducted by the National Park Service at all seven of the proposed river access sites (NPS 2004d) showed that no protected species of plants or animals were present at any of the sites. Therefore, this topic was dropped from further consideration.
Air Quality	Dismissed – The no action alternative would involve limited construction activities, and only negligible change in air quality would result. Under the preferred alternatives, the occurrence of fugitive dust and equipment emissions would be mitigated and would not likely affect visitors or staff. Any occurrence of construction dust would be localized and transient. If dust were generated by installation of facilities, best management practices for dust suppression would be initiated.
Prime and Unique Farmlands	Dismissed – An August 11, 1980 memorandum from the Council on Environmental Quality directed that federal agencies must assess the effects of their actions on farmland soils classified by the Natural Resource Conservation Service (NRCS) as prime or unique (CEQ 1980). Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oil seed crops and that is available for these uses (i.e., it cannot be areas of water, urban, or developed land); unique farmland is land that is used for the production of high value food crops, such as fruits, vegetables and nuts. In general, prime and unique farmlands have the combination of soil properties, growing season, and moisture supply needed to produce sustained high yields of crops. A number of the soil types in the park have been classified by the NRCS as prime farmlands (NPS 2003).

Table 1 (Continued)
Impact Topics Retained Or Dismissed

Impact Topic	Action - Justification
	A number of soil types in the park (north of Holcomb Bridge Road) are classified as prime farmlands. At six of the seven sites, there would be no effects on prime and unique farmlands because these resources are not present. At the Settles Bridge site, there is potential to have prime and unique farmland based on the definition by NRCS. During construction and operation, the effects on prime and unique farmlands at Settles Bridge would be long-term, negligible, adverse and direct.
Mineral and Agricultural Resources	Dismissed – Lands in the Chattahoochee River National Recreation Area are not available for farming or mineral extraction; no adverse impacts on these resources are predicted.
Accessibility for Individuals with Disabilities	Dismissed – No appreciable effects to Americans with disabilities would be anticipated under either alternative. Ramps capable of handling disabled persons would be provided at the Sandy Point, Paces Mill and Jones Bridge access point under Alternative B.
Energy Requirements and Conservation Potential	Dismissed – The National Park Service reduces energy costs, eliminates waste, and conserves energy resources by using energy-efficient and cost-effective technologies. Energy efficiency is incorporated into the decision making process during the design and acquisition of buildings, facilities, and transportation systems that emphasize the use of renewable energy sources.
Natural Lightscape	Dismissed - In accordance with National Park Service Policies 2001 the Park strives to conserve natural landscapes including limiting the use of night time lights. Because artificial lighting would not be provided at the proposed access facilities and the Park is closed at dusk, no effects from artificial light sources would be anticipated.
Wilderness	Dismissed - There are no designated wilderness areas in the park or in the vicinity.
Park Operations	Dismissed – Park operations would not change greatly as a result of the proposed action. The improvements at Johnson Ferry and Settles Bridge would increase costs for maintenance.

Table 1 (Continued)
Impact Topics Retained Or Dismissed

Impact Topic	Action - Justification
Socially or Economically Disadvantaged Populations	Dismissed – Executive Order 11898. “General Actions to address Environmental Justice in Minority Populations and Low Income Populations”, requires that all federal agencies address the effects of policies on minorities and low income populations and communities. None of the alternatives would have disproportionate health or environment effects on minorities or low income populations as defined in the Environmental Protection Agency’s Draft Environmental Justice (July 1996).
Population	Dismissed – The proposed action would not affect population in the surrounding area or region.
Sacred Sites	Dismissed – There are no Native American sacred sites in the park or area that would be affected by the proposed project.
Indian Trust Resources	Dismissed – Indian Trust Assets are owned by Native Americans but held in trust by the United States. Requirements are included in the Secretary of the Interior’s Secretarial Order 3206, “American Indian Tribal Rites, Federal – Tribal responsibilities, and the Endangered Species Act,” and Secretarial Order 3175, “Departmental Responsibilities for Indian Trust Resources.” According to Tony Paredes, Indian Cultural Resources, National Park Service, Southeast Regional Office, the Chattahoochee River National Recreation Area does not manage Indian Trust Assets.
Possible Conflicts Between the Proposed Action and Land Use Plans, Policies or Controls for the Area Concerned (including local, state or Indian tribe) (40 CFR 1502.16, 1506.2(d)), and the Extent to Which Your Park would Reconcile the Conflict	Dismissed – the proposed project would not affect land use plans, policies or controls in the surrounding area.

Table 1 (Continued)
Impact Topics Retained Or Dismissed

Impact Topic	Action - Justification
Natural or Depletable Resource Requirements and Conservation Potential	Dismissed – the project would have extremely small commitments of resources associated with construction and operation of the proposed river access facilities.
Ecologically Critical Areas, Wild and Scenic Rivers or Other Unique Natural Resources	Dismissed – ecologically critical areas, wild and scenic rivers or other unique natural resources would not be affected by the proposed project.

ALTERNATIVES

DESCRIPTION OF THE ALTERNATIVES

The alternatives assessed include: Alternative A: No Action/Continue Current Management; and Alternative B: Reduce Resource Damage by Improving River Recreation Access, the Preferred Alternative. This section also describes alternatives that were considered but not further assessed, and available mitigation measures to avoid, reduce or minimize effects of the proposed project. Figures 2 through 8 show the conceptual layouts for each of the proposed river access facilities.

The National Park Service completed a Value Design Analysis in 2003 for the proposed project. The study recommended specific improvements and provided costs estimates for each location. The Design Team members consisted of the National Park Service local staff, National Park Service, Denver Service Center staff, and local design consultants Post Buckley, Schuh and Jernigan, Inc. The team incorporated information from site surveys provided by the National Park Service and the park's knowledge and experience with each location into the design development.

The objective of the Value Design Analysis was to evaluate the identified sites and further develop the best possible design alternative from those presented in the Schematic Design Phase. The final product of this study is a design analysis report, an outline of specifications, and site design documents at a level of completion equivalent to 40 percent complete construction documents. The design analysis report included a summary description of the alternatives considered in the Schematic Design Phase and Design Development Phase, and cost estimates. Sustainability is a concept that the National Park Service uses as a guiding principle of facility design planning and development. The objectives of sustainability are to design park facilities to minimize adverse effects on natural and cultural values, to reflect their environmental setting, to maintain and encourage biodiversity, to construct and retrofit facilities using energy-efficient materials and building techniques, to operate and maintain facilities to promote their sustainability, and to illustrate and promote conservation principles and practices through sustainable design and ecological sensitive use. Essentially, sustainability is living within the environment with the least impact on the environment. The preferred alternative supports the practice of planning for sustainable design and use.

Alternative A: No Action/Continue Current Management

The No Action/Continue Current Management Alternative would consist of a continuation of existing management actions. The park would continue to monitor use and resource degradation at river access points. The NPS would continue to undertake short-term management responses to resource damage resulting from use of existing deteriorating river access points.

The No Action/Continue Current Management Alternative provides a basis for comparing the management direction and environmental consequences with all the alternatives. Should the No Action/Continue Current Management Alternative be implemented, the National Park Service would respond to future needs and conditions associated with the park's issues without major actions or changes from the present course. Analysis of the "no action" alternative is required under the National Environmental Policy Act and Director's Order 12.

CHATTAHOOCHEE RIVER CONDITIONS
 LOW WATER SURFACE ELEVATION: 892.72
 AVERAGE WATER SURFACE ELEVATION: 894.19
 100YR WATER SURFACE ELEVATION: 909.65
 REFERENCE:
 FEDERAL EMERGENCY MANAGEMENT AGENCY
 "FLOOD INSURANCE STUDY" FULTON COUNTY,
 GA; JULY 20, 1998.
 U.S. GEOLOGICAL SURVEY "GAGE 0233500
 STATION READINGS" NORCROSS, GA;
 1999-2004.
 VERTICAL DATUM: NGVD29 + 0.15' = GEORGIA
 EAST ZONE NAVD 88.

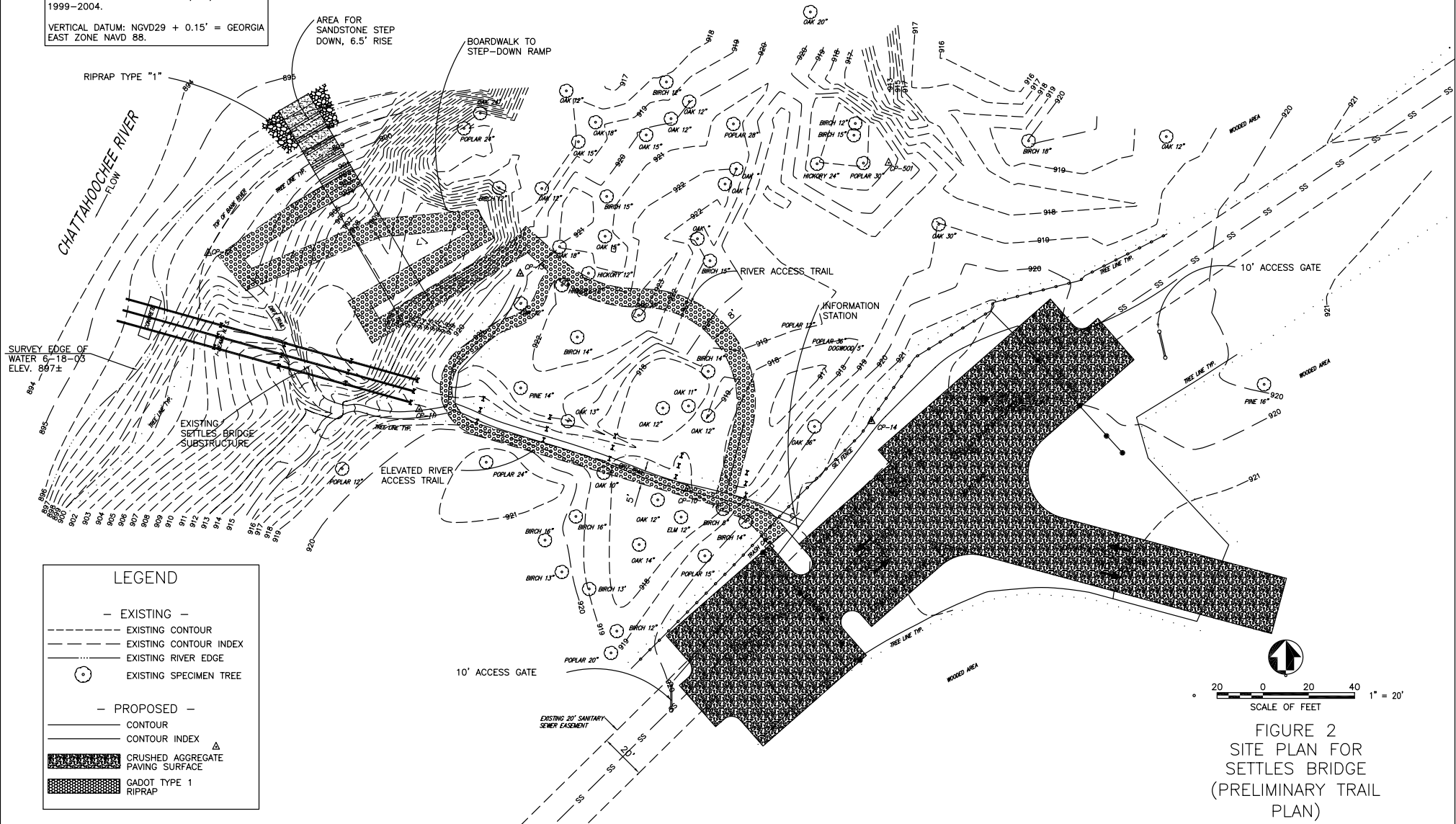
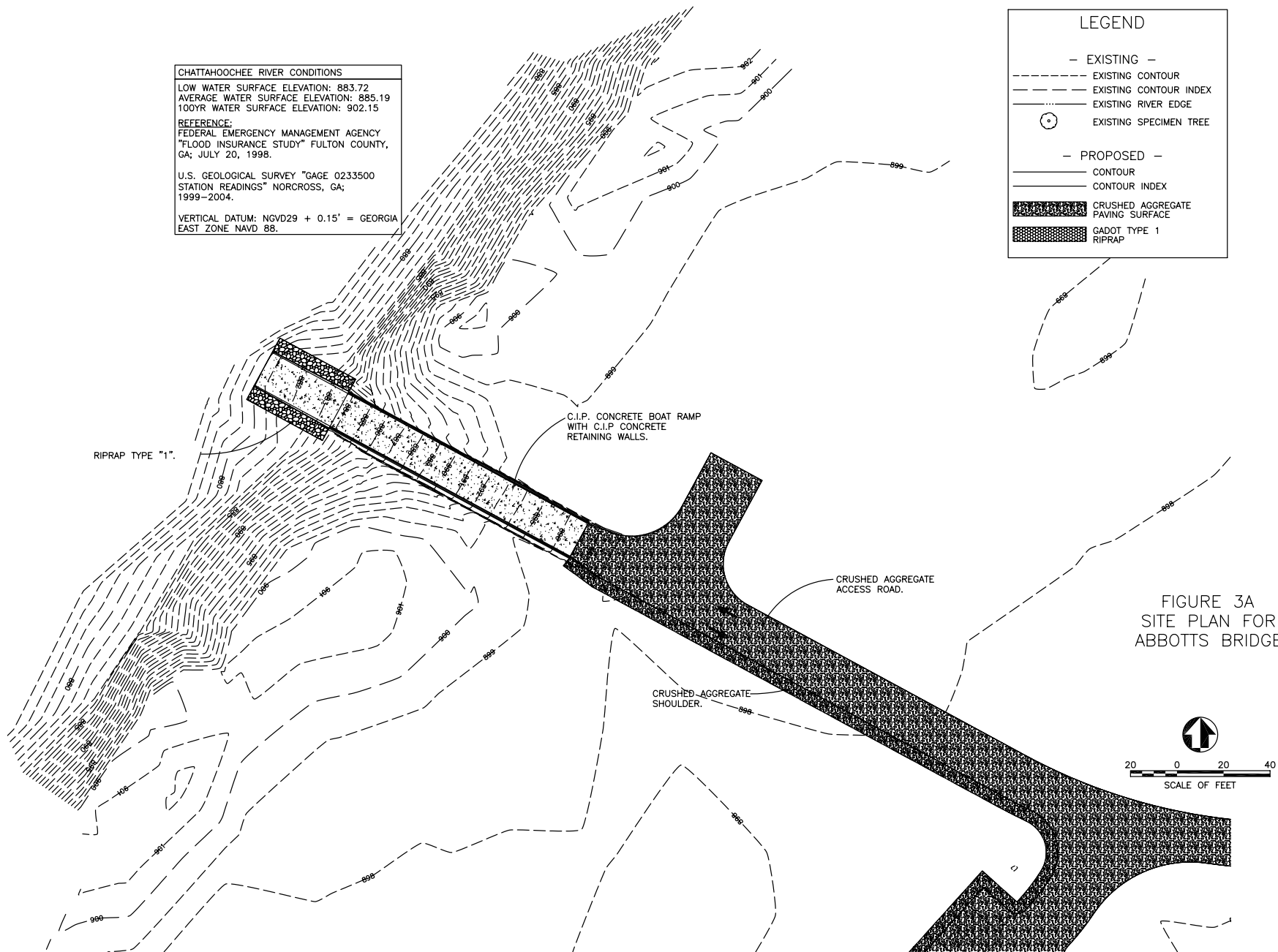
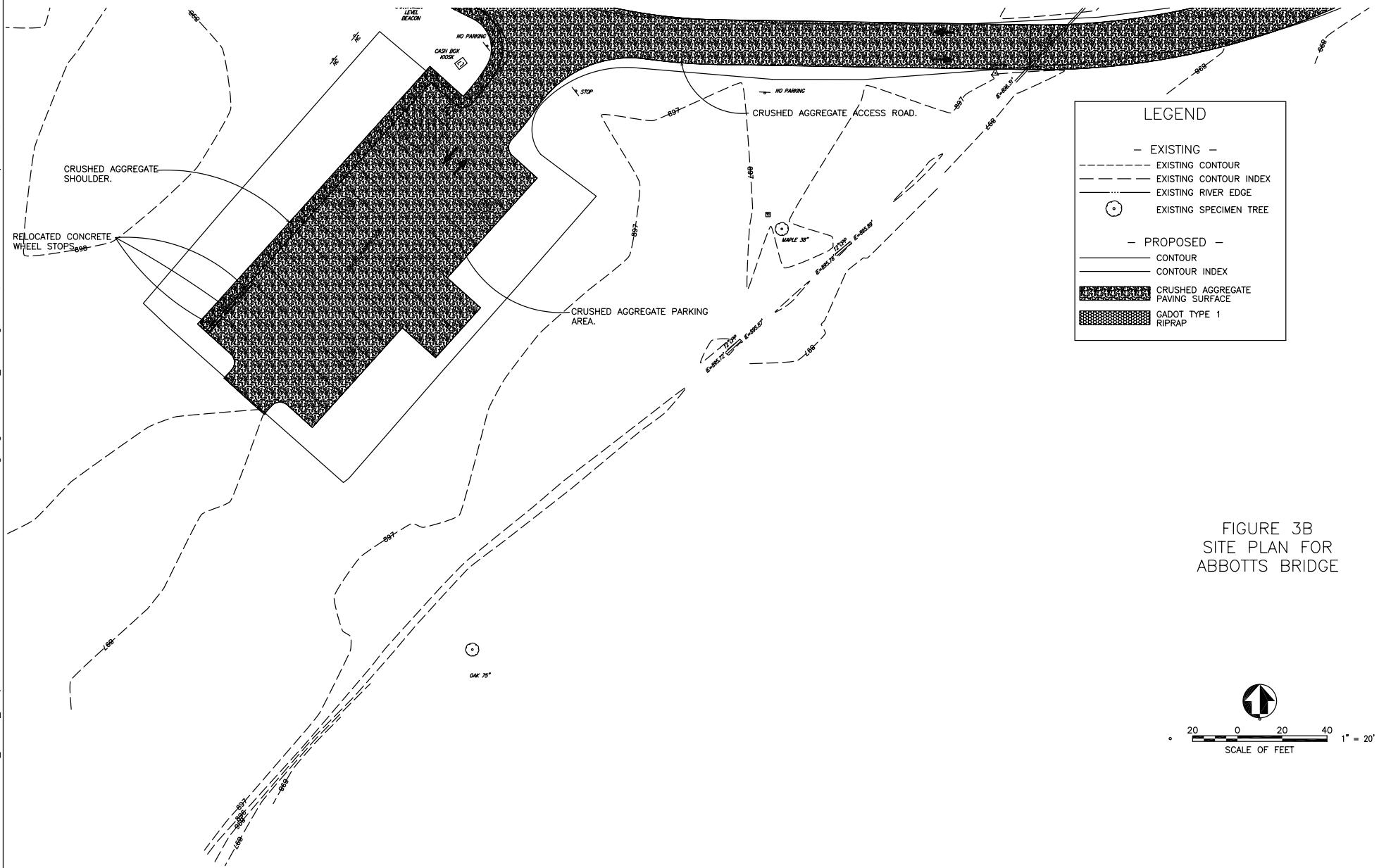
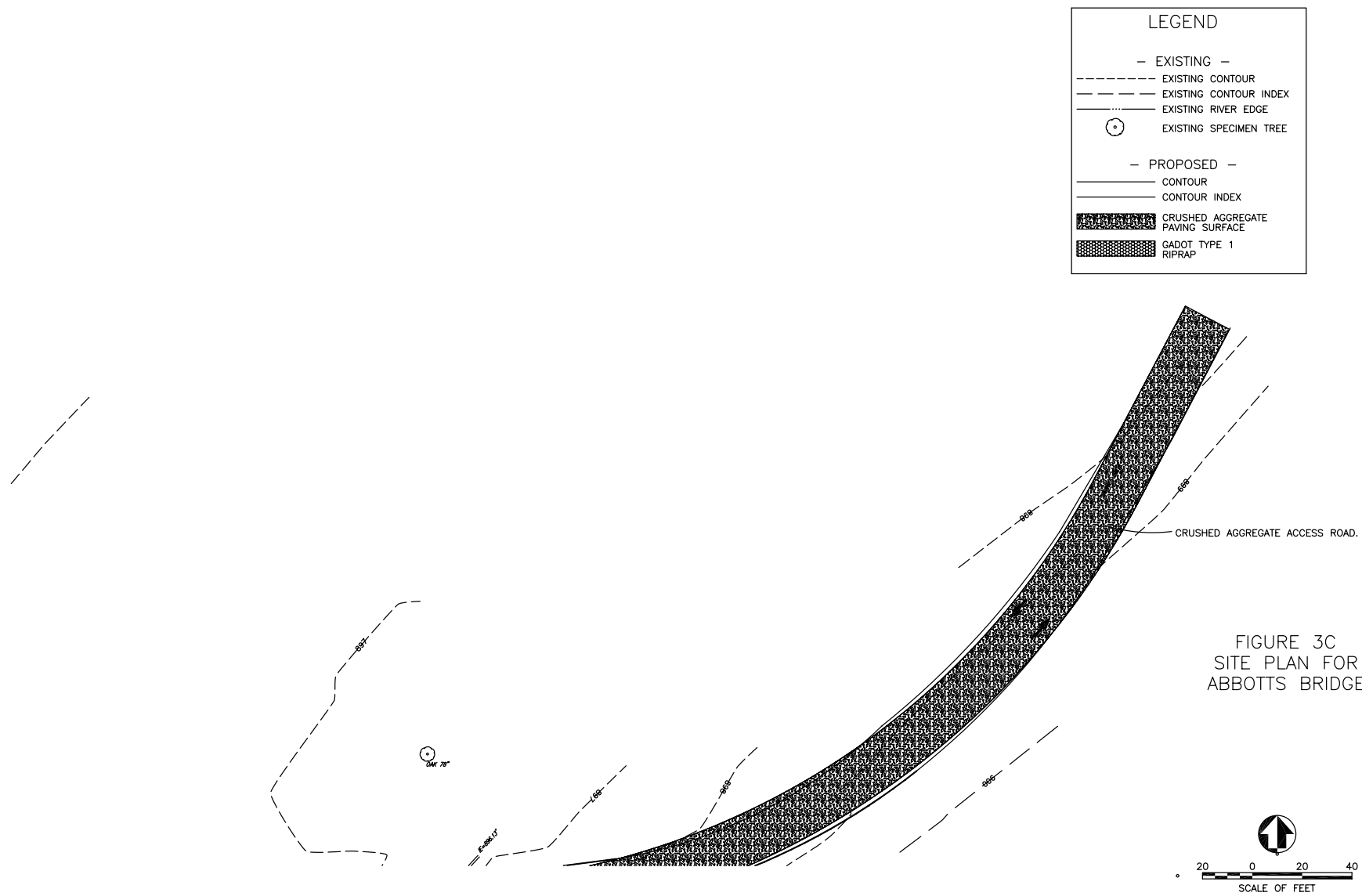


FIGURE 2
 SITE PLAN FOR
 SETTLES BRIDGE
 (PRELIMINARY TRAIL
 PLAN)







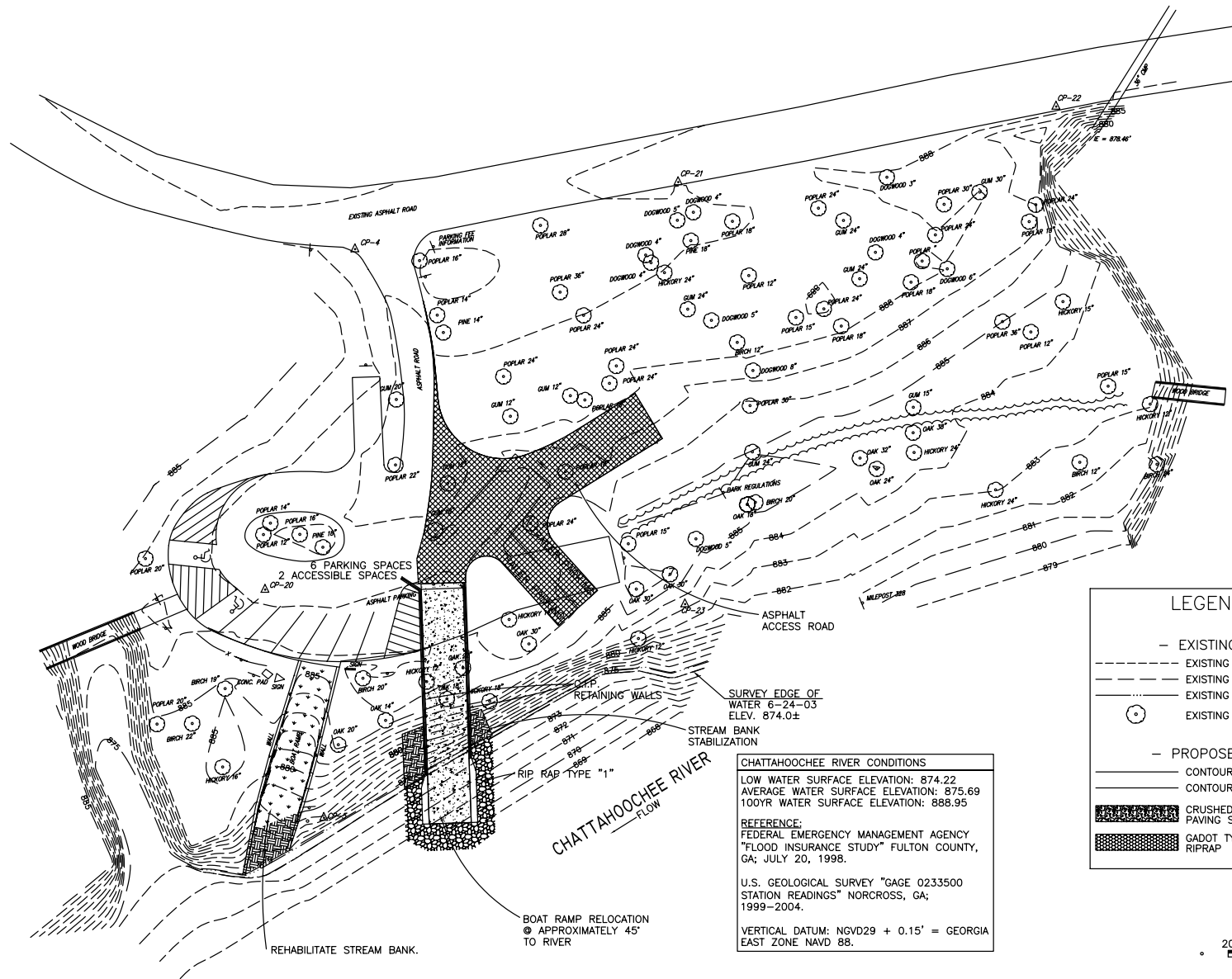


FIGURE 4
SITE PLAN FOR
JONES BRIDGE

CHATTAHOOCHEE RIVER CONDITIONS
 LOW WATER SURFACE ELEVATION: 874.22
 AVERAGE WATER SURFACE ELEVATION: 875.69
 100YR WATER SURFACE ELEVATION: 888.95
REFERENCE:
 FEDERAL EMERGENCY MANAGEMENT AGENCY
 "FLOOD INSURANCE STUDY" FULTON COUNTY,
 GA; JULY 20, 1998.
 U.S. GEOLOGICAL SURVEY "GAGE 0233500
 STATION READINGS" NORCROSS, GA;
 1999-2004.
 VERTICAL DATUM: NGVD29 + 0.15' = GEORGIA
 EAST ZONE NAVD 88.

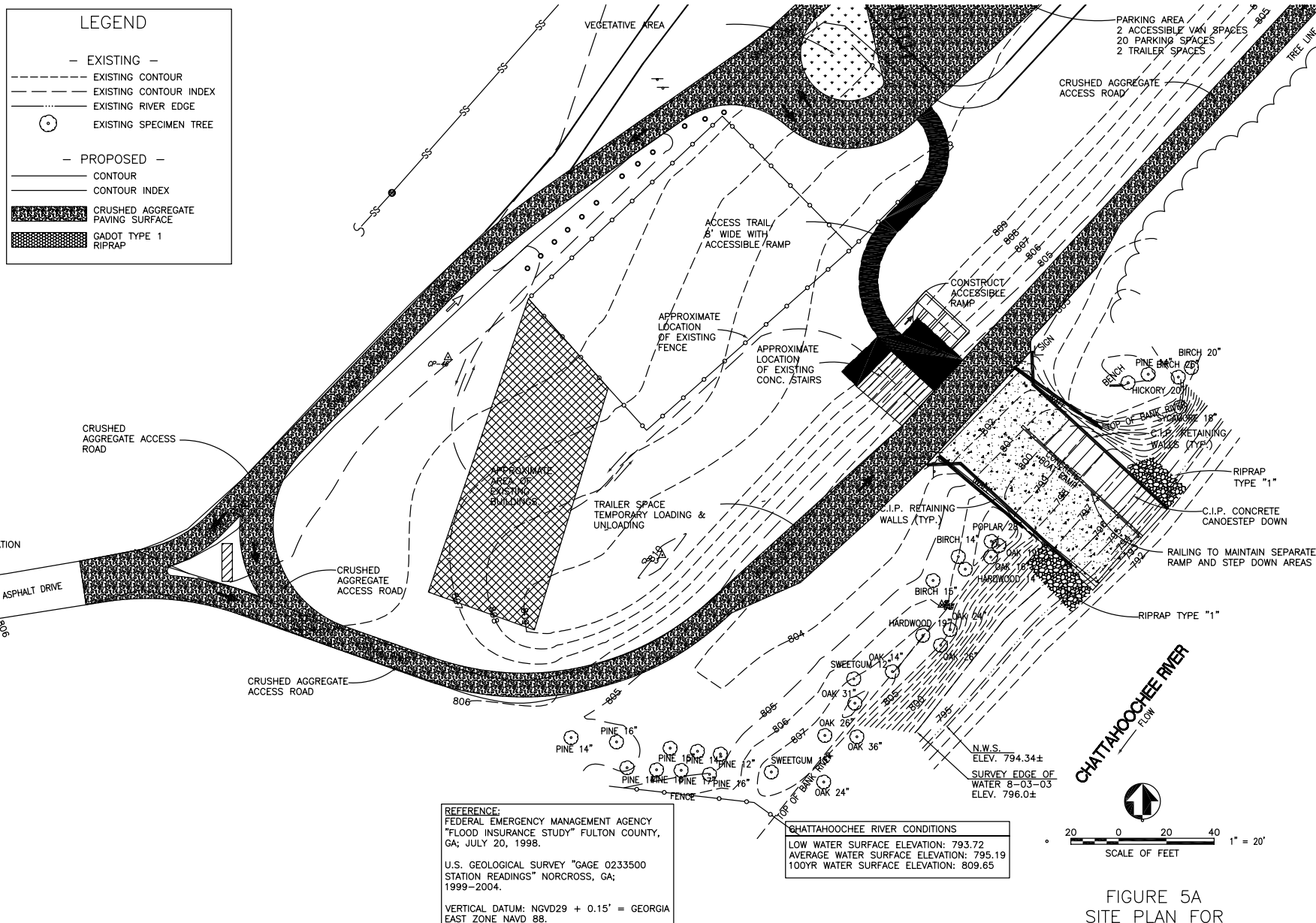


FIGURE 5A
SITE PLAN FOR
JOHNSON FERRY

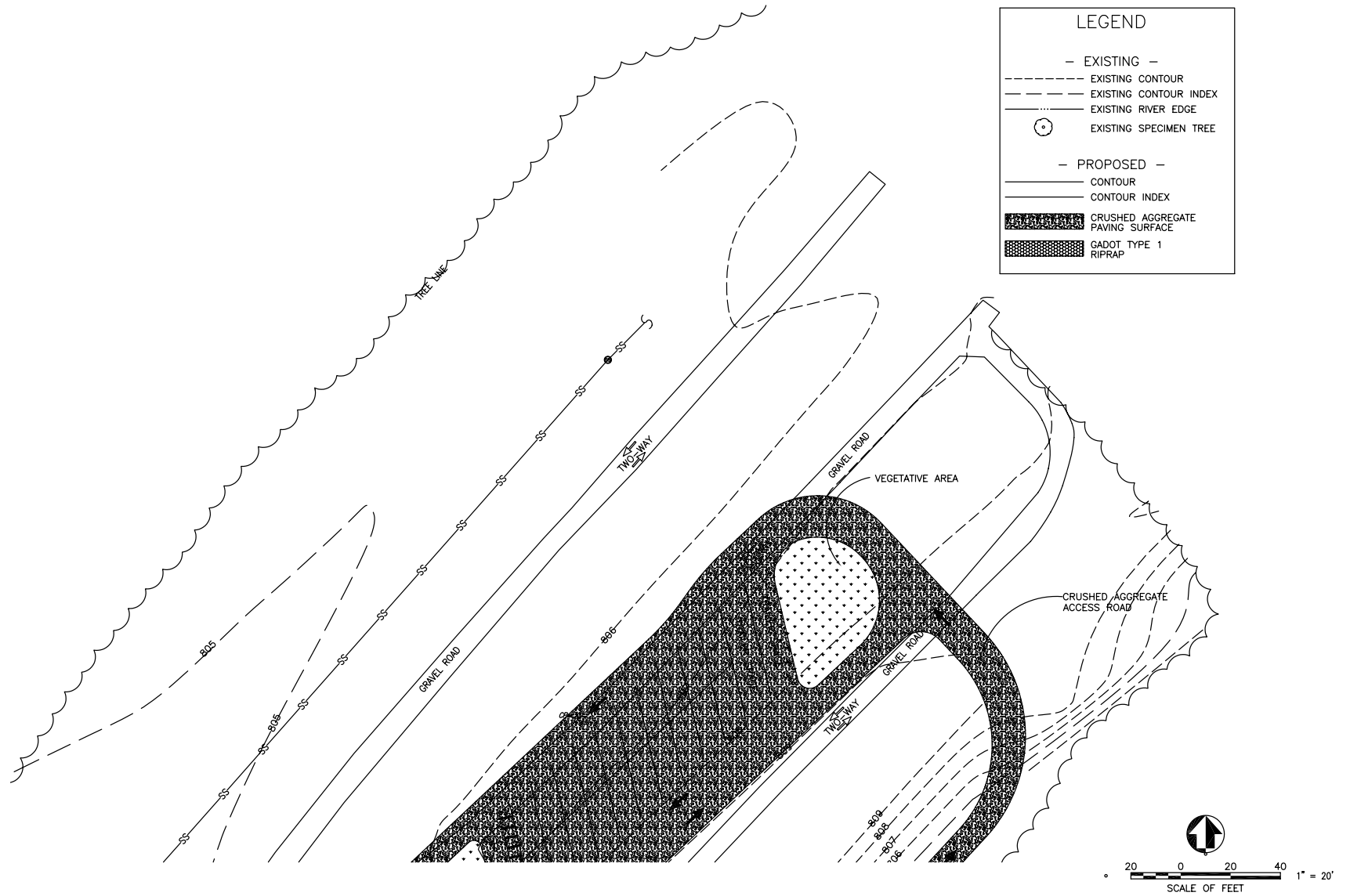


FIGURE 5B
SITE PLAN FOR
JOHNSON FERRY

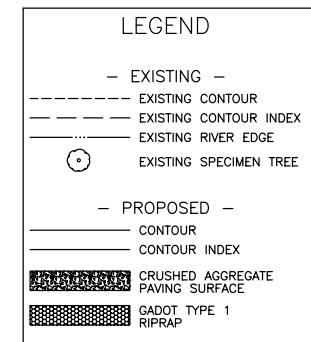
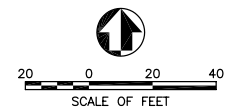


FIGURE 6
SITE PLAN FOR
SANDY POINT



CHATTAHOOCHEE RIVER CONDITIONS
LOW WATER SURFACE ELEVATION: 770.03
AVERAGE WATER SURFACE ELEVATION: 771.19
100YR WATER SURFACE ELEVATION:
<u>REFERENCE:</u>
FEDERAL EMERGENCY MANAGEMENT AGENCY
"FLOOD INSURANCE STUDY" CITY OF ATLANTA, GA; MARCH 4, 1987.
U.S. GEOLOGICAL SURVEY "GAGE 0233600
STATION READINGS" ATLANTA, GA; 1999-2004.
VERTICAL DATUM: NGVD29 + 0.15' = GEORGIA
EAST ZONE NAVD 88

I:\743513 Chattahoochee_Access_Ramp\Final Reviewed EA_Jan 2005\Document Files\Design Figures\rob\SITE_WW.dwg, SHT-41, 01/26/2005 11:56:47 AM, p0008113, 1:1, 95349

CHATTAHOOCHEE RIVER CONDITIONS
LOW WATER SURFACE ELEVATION: 765.33
AVERAGE WATER SURFACE ELEVATION: 766.49
100YR WATER SURFACE ELEVATION: 778.45
REFERENCE:
FEDERAL EMERGENCY MANAGEMENT AGENCY
"FLOOD INSURANCE STUDY" CITY OF ATLANTA,
GA; MARCH 4, 1987.
U.S. GEOLOGICAL SURVEY "GAGE 0233600
STATION READINGS" ATLANTA, GA; 1999-2004.
VERTICAL DATUM: NGVD29 + 0.15' = GEORGIA
EAST ZONE NAVD 88.

LEGEND

— EXISTING —

--- EXISTING CONTOUR

- - - EXISTING CONTOUR INDEX

..... EXISTING RIVER EDGE

EXISTING SPECIMEN TREE

— PROPOSED —

— CONTOUR

- - - CONTOUR INDEX

CRUSHED AGGREGATE PAVING SURFACE

GADOT TYPE 1 RIPRAP

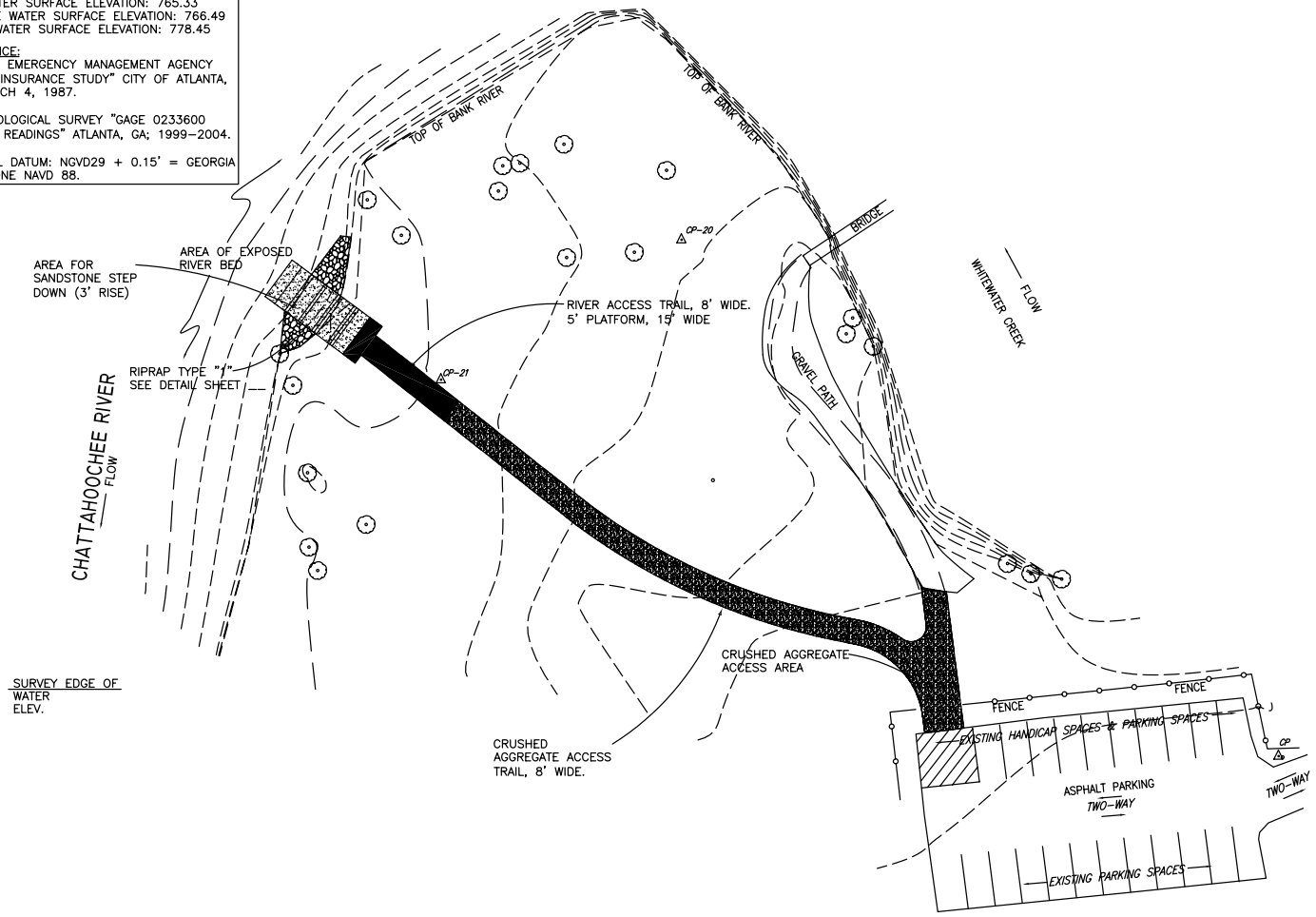
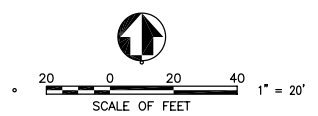


FIGURE 7
SITE PLAN FOR
WHITEWATER CREEK



Alternative B: Reduce Resource Damage by Improving River Recreation Access, the Preferred Alternative

The objective of this alternative would be to upgrade and/or replace existing river access facilities at seven sites to protect resources and to improve visitor experience.

The following is a summary of the proposed construction activities that would occur under Alternative B. Please refer to Figures 2-8 for layouts of each location and design features. Please note that these drawings are preliminary and some of the detailed features at each site may change in the final design. Table 2 provides a detailed summary of the design features of the facilities proposed at each location, including a generalized assessment of the extent of the construction footprints for each design component (rip-rap, retaining walls, access roads, ramps, and other features):

Settles Bridge: A recycled crushed concrete parking area would be created within the sewer easement to provide the least impact to existing vegetation. The site would have an access trail from the parking lot to the river. The access trail would provide access to the proposed step-down ramp. The step-down ramp would be stabilized with rip-rap. The purpose of the trail would be to provide improved river access, mitigate impacts to the site caused by non-designated informal trails, and reduce contact with the potentially hazardous bridge structure.

The total construction footprint for the Settles Bridge site, including all areas that would require soil-disturbing activities, would be less than two acres (Table 2), of which less than one acre would include forested habitat.

Abbotts Bridge: The existing boat ramp would be replaced, and the existing access road would be restored. The existing boat ramp and timber retaining walls would be replaced with a poured natural sandstone concrete ramp and wall. The ramp and retaining walls would be stabilized with rip-rap. The existing access road would be restored through an overlay of recycled crushed concrete.

The total construction footprint for the Abbots Bridge site, including all areas that would require soil-disturbing activities, would be less than one acre (Table 2).

Jones Bridge: The existing boat ramp would be removed, and a new boat ramp would be constructed approximately 50 feet upstream. The ramp and retaining walls would be stabilized with rip-rap. The existing access road would be repaved. The existing boat ramp would be restored through use of fill and re-vegetation. The relocation of the boat ramp would provide additional parking spaces through the striping of the existing parking area.

A second previously existing boat ramp, located approximately ½ mile north of existing boat ramp and within the Jones Bridge “unit”, would be rehabilitated by filling in the old ramp access point with earth. No excavation would be conducted at this second site. The entire ramp would be filled with earth and revegetated.

The total construction footprint for the Jones Bridge site, including all areas that would require soil-disturbing activities, would be less than one acre (Table 2).

Table 2
Chattahoochee River National Recreation Area River Access Facilities -
General Construction Features of the Alternative B (The Preferred Alternative),
Approximate Design Component Footprints, Project Benefits, and Design Options
(Please Refer to Figures 2-9 for Details)(Source – PBST, 2004)

Site	Preferred Alternative	General Construction Features	Approximate Design Component Footprint	Project Benefits	Design Options Considered
Settles Bridge	Access trails to a sandstone step-down ramp with a recycled crushed concrete parking lot.	Recycled crushed concrete access road, step-down ramp, and trail connecting to a recycled crushed concrete parking lot. Rip-rap. Revegetate area. Temporary coffer dam.	Less than one acre of forested habitat affected by trail and step-down ramp. Less than one acre of previously disturbed wastewater pipeline right-of-way affected by parking lot	Provide river access, mitigate impacts of past and future human disturbance to the site, and reduce visitor contact with the potentially hazardous bridge structure.	Several river access trail options were considered to minimize social trails throughout the area (NPS, 2003).
Abbotts Bridge	Replace existing boat ramp and restoration of the existing access road.	Remove and replace retaining wall and boat ramp. Resurface road and parking lot with recycled crushed concrete. Rip-rap. Revegetate site. Temporary coffer dam.	Total disturbed area less than one acre of previously cleared and developed land.	Improve existing deteriorating facility.	Develop an access roadway and river access in the undeveloped section of the park.

Table 2 (Continued)
Chattahoochee River National Recreation Area River Access Facilities -
General Construction Features of the Alternative B (The Preferred Alternative),
Approximate Design Component Footprints, Project Benefits, and Design Options
(Please Refer to Figures 2-9 for Details)(Source – PBST, 2004)

Site	Preferred Alternative	General Construction Features	Approximate Design Component Footprint	Project Benefits	Design Options Considered
Johnson Ferry North	Parking area constructed between the existing dirt/gravel roadways. Handicap accessible trail from the boat ramp access area. The existing boat ramp would be replaced with a combination boat ramp and step down ramp.	Remove existing boat ramp, and existing retaining wall. Construct concrete boat ramp, step down ramp, retaining wall. Apply new recycled crushed concrete access road. Construct 27-space recycled crushed concrete access parking lot and two recycled crushed concrete access trailer spaces. Construct trail made from recycled building materials. Rip-rap. Revegetation of the site . Temporary coffer dam.	Total disturbed area less than one acre	The implementation of a smaller boat ramp in width provides a means of access to the river within the existing ramp footprint. Improved safety, enabling the public to access an existing boat ramp that has been closed previously. Provide new handicap access.	Other locations for the proposed parking area and step-down ramp.

Table 2 (Continued)
Chattahoochee River National Recreation Area River Access Facilities -
General Construction Features of the Alternative B (The Preferred Alternative),
Approximate Design Component Footprints, Project Benefits, and Design Options
(Please Refer to Figures 2-9 for Details)(Source – PBST, 2004)

Site	Preferred Alternative	General Construction Features	Approximate Design Component Footprint	Project Benefits	Design Options Considered
Sandy Point at Palisades	Installation of a step-down ramp and access trail between the restroom facilities and the step-down ramp.	Construct one step-down ramp, no retaining wall. Construct trail from recycled materials. Rip-rap. Revegetation of disturbed areas. Temporary coffer dam.	Total disturbed area less than one acre	Direct access to the restroom facilities from the river access point.	Several alternative layouts were considered (NPS, 2003). The layout that was selected would use existing trails to connect to the parking lot, therefore would not affect forested areas.

Table 2 (Continued)
Chattahoochee River National Recreation Area River Access Facilities -
General Construction Features of the Alternative B (The Preferred Alternative),
Approximate Design Component Footprints, Project Benefits, and Design Options
(Please Refer to Figures 2-9 for Details)(Source – PBST, 2004)

Site	Preferred Alternative	General Construction Features	Approximate Design Component Footprint	Project Benefits	Design Options Considered
Whitewater Creek at Palisades	Construction paved trail head. Install step-down ramp and an access trail from the existing parking lot to the step-down ramp.	Remove concrete walkway. Construct one step-down ramp, trail and trail platform from recycled building materials. Reinforced grass access trail from trailhead to the clearing. Access area covered with recycled crushed concrete. Rip-rap. Revegetation. Temporary coffer dam.	Total disturbed area less than one acre	The implementation of the trail head would help create a focus point where an information board can be located. Reinforced grass would provide erosion control measures from the imposed fish stocking vehicular traffic. The step down ramp would provide additional access area for the fish stocking vehicles.	Options of materials for an access trail, Additional access from the parking area to Whitewater Creek, and alternatives for defining the access trails.

Table 2 (Continued)
Chattahoochee River National Recreation Area River Access Facilities -
General Construction Features of the Alternative B (The Preferred Alternative),
Approximate Design Component Footprints, Project Benefits, and Design Options
(Please Refer to Figures 2-9 for Details)(Source – PBST, 2004)

Site	Preferred Alternative	General Construction Features	Approximate Design Component Footprint	Project Benefits	Design Options Considered
Paces Mill	Replacement of the existing boat ramp, restoration of the existing boat access road. Installation of a trail, viewing platform and fence.	Remove existing boat ramp and existing retaining wall. Construct concrete boat ramp, concrete retaining wall, asphalt access road, one asphalt trailer parking space. Construct trail and viewing platform from recycled materials. Fence 50 feet from river. Temporary coffer dam.	Total disturbed area less than one acre	The boat ramp access road would provide temporary loading and unloading trailer parking space. A viewing platform would provide pedestrians a safe elevated access area for viewing of the river channel.	Improvements to vehicular and pedestrian circulation and access to the river.
Jones Bridge	Relocating the boat ramp approximately 50 feet upstream of the existing boat ramp.	Remove existing concrete boat ramp. Construct new concrete boat ramp and concrete retaining wall. approximately 50 feet upstream of existing ramp. Biostabilization. Temporary coffer dam.	Total disturbed area less than one acre of previously cleared and developed land, including a small area of forest along the river.	A shorter boat ramp is more accessible to vehicular traffic, perpendicular to the river, and avoids the conflict with the small tributary inlet. Reduces effects of visitor use on small tributary inlet vegetation.	Replacing the existing boat ramp with cast-in-place concrete retaining walls.

Johnson Ferry North: A recycled crushed concrete parking area would be constructed between the existing dirt/gravel roadways east of the concession buildings. This area would be repaved with recycled crushed concrete to provide 27 parking spaces including spaces for handicap accessibility and trailer parking. The parking area would be accessed through extension of an existing dirt/gravel roadway and a new handicap accessible trail from the boat ramp river access area. The existing boat ramp would be replaced with a combination boat ramp and step down ramp. The ramp and retaining walls would be stabilized with rip-rap. The step down ramp would be located on the upstream side of the boat ramp with a rail installed to separate the boat ramp area from the step down ramp.

The total construction footprint for the Johnson Ferry North site, including all areas that would require soil-disturbing activities, would be less than one acre (Table 2).

Sandy Point at Palisades: A trail and step-down ramp would be constructed at this site. The preferred location for the trail would be along an existing pedestrian footpath that provides direct access to the restroom facilities from the river access point. The step-down ramp installation is located within an area identified as highly eroded from pedestrian and boat launch use.

The total construction footprint for the Sandy Point site, including all areas that would require soil-disturbing activities, would be less than one acre (Table 2).

Whitewater Creek at Palisades: Construction here would include a recycled crushed concrete paved trail head and parking lot, access trail, and step-down facility.

The total construction footprint for the Whitewater Creek site, including all areas that would require soil-disturbing activities, would be less than one acre (Table 2).

Paces Mill: The existing boat ramp and retaining walls would be replaced with a poured natural sandstone concrete ramp and retaining walls. The ramp and retaining walls would be stabilized with rip-rap. A trail and viewing platform would be constructed next to the ramp, overlooking the river. A fence would be constructed 50 feet from the river.

The total construction footprint for the Paces Mill site, including all areas that would require soil-disturbing activities, would be less than one acre (Table 2).

Environmentally Preferred Alternative

In accordance with Director's Order #12 (NPS 2001), the National Park Service is required to identify the "environmentally preferred alternative" in all environmental documents, including environmental assessments. The Preferred Alternative (Alternative B) as presented in this environmental assessment is the Environmentally Preferred Alternative. The environmentally preferred alternative is determined by applying the criteria suggested in the 1969 National Environmental Policy Act, which is guided by the Council on Environmental Quality. The Council on Environmental Quality provides direction that "the environmentally preferred alternative is the alternative that would promote the national environmental policy as expressed in Section 101 of the National Environmental Policy Act", which considers the following criteria (this section also summarizes how the preferred alternative meets these requirements):

Fulfilling the responsibilities of each generation as trustee of the environment for succeeding generations: The improved river access facilities would reduce soil erosion by stabilizing the soil at each location. The upgraded facilities would also provide an improvement in the visitor's experience at the park by providing safe, well designed, and aesthetically pleasing access ramps, trails, viewing platforms, and parking areas. These are major improvements over continuation of existing conditions under the No Action/Continue Current Management Alternative.

Assuring for all Americans a safe, healthful, productive, and aesthetically and culturally pleasing surroundings: The upgraded and new facilities would provide improved safety conditions for park visitors at the existing sites as compared to the No Action/Continue Current Management Alternative by providing state-of-the-art design of boat and step-down ramps, trails, and viewing platforms. The proposed facilities would be aesthetically pleasing to visitors, and would be a marked improvement over the existing deteriorating facilities. These are major improvements over continuation of existing conditions under the No Action/Continue Current Management Alternative. New handicap access would also be provided at two of the facilities.

Attaining the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences: Each of the seven river access facilities has been carefully designed to improve safety conditions for visitors through construction of new paved ramps, retaining walls, trails, parking lots, boardwalks, and viewing platforms (depending on the site). The facilities have been designed according to the latest safety and engineering standards as specified by the National Park Service (i.e., the use of reclaimed wood and plastic building material for boardwalks and platforms). This will result in an improvement of beneficial uses for park visitors. Each of the seven river access facilities has also been carefully designed to minimize potentially adverse effects on natural resources (no cultural resources would be affected by Alternative B). A small 0.01 acre wetland was identified in the preliminary design at the Settles Bridge site and has been completely avoided. Potentially adverse effects of soil erosion resulting from construction have been avoided by a combination of best management practices at all of the sites and additionally, by use of temporary coffer dams. The proposed project meets this criterion to a much greater degree than the No Action/Continue Current Management Alternative.

Preserving important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice: The National Park Service conducted literature and field surveys of each site to determine whether protected species, wetlands, or cultural resources were present. A small 0.01 acre wetland was identified in the preliminary design at the Settles Bridge site and although the parking lot would be constructed adjacent to this resource, no fill would be placed in the wetland. No protected species were found to occur or potentially occur at any of the seven sites. Effects on other natural resources and water quality would be minimized to the maximum extent practicable by implementation of best management practices during construction. The preferred alternative therefore meets and exceeds this requirement.

Achieving a balance between population and resource use which would permit high standards of living and a wide sharing of life's amenities: The proposed facilities would affect less than two acres of mesic floodplain hardwood forest at Jones Bridge and Settles Bridge sites (total for both sites). No other terrestrial resources would be affected by Alternative B. The project would affect a very small area of aquatic habitat associated with the permanent placement of rip rap and the short-term construction of temporary coffer dams. The benefits resulting from improved visitor experience and safety at the new facilities are very high in relation to this level of effect on natural resources. The preferred alternative therefore meets and exceeds this requirement.

Enhancing the quality of renewable resources and approach the maximum attainable recycling of depletable resources: The proposed river access facilities have been designed using of reclaimed wood and plastic building material for boardwalks and platforms. The preferred alternative therefore meets and exceeds this requirement.

In the case of the present project, the preferred alternative is the same as the environmentally preferred alternative, since there is only one action alternative. The No Action/Continue Current Management Alternative, while meeting the short-term needs of the public, does not meet the increased demand for alternative means of river access to the Chattahoochee River. Therefore, the No Action/Continue Current Management Alternative would not meet the above goals as well as the preferred alternative.

Alternatives Considered But Not Further Assessed

Potential additional alternative sites within the new 10,000 acre park limits were considered in the early phases of the project but these were eliminated from further consideration because they were located in areas that were not owned by the National Park Service. The sites that were assessed were located in the vicinity of Highway 20 (two sites, one south and one north of Highway 20, Rogers Bridge, McGinnis Ferry, and Cochran Shoals (Sibley Creek). These sites were not available for purchase and were therefore not assessed further.

Mitigation Measures

Best Management practices and mitigation measures would be used to prevent or minimize potential adverse effects associated with the preferred action alternative. These practices and measures would be incorporated into the project construction documents to ensure that adverse impacts would not occur. Mitigation measures undertaken during project implementation would include, but not strictly be limited to, those listed in Table 3.

HOW THE PREFERRED ALTERNATIVE MEETS THE OBJECTIVES OF THE PROPOSED ACTION

Alternative B, the proposed action, would meet the access goals and objectives of the Chattahoochee River National Recreation Area for the following reasons:

Construction and operation of the proposed river access facilities would help minimize stream bank erosion and habitat disturbance associated with visitor over use.

Table 3
Mitigation Measures and Best Management Practices

Potential Adverse Effect	Mitigation Measure or Best Management Practice
Direct effects from construction activities on water quality and aquatic life.	Protection of all construction areas to confine potentially adverse activities to the minimum area required for construction. All protection measures would be clearly stated in the construction specifications, and workers would be instructed to avoid conducting activities beyond the construction zone. Cofferdams would be constructed to contain any runoff from construction sites. Cofferdams would be constructed from the landward side only and would be removed at a suitable time following construction after the sites are stabilized with erosion control technology. All disturbed riverbank areas would be rehabilitated with native vegetation.
Erosion resulting from construction-related surface disturbance	The contractor would be required to control erosion prior to, during and following ground disturbing activities. Standard erosion control measures would be used to minimize soil erosion. Erosion barriers would be installed, inspected, and maintained regularly to ensure effectiveness. The primary measure used to control stormwater runoff would be installation of temporary silt fencing. Silt fences are made of synthetic fabric and are placed in drainage contours to trap sediments generated during construction. All disturbed riverbank areas would be rehabilitated with native vegetation.
Construction in previously undisturbed areas	Construction activities would take advantage, where possible, of sites where previous disturbance has already had adverse effects. At Settles Bridge, existing trails will be used to the maximum extent practicable to minimize effects on native mesic hardwood forest habitat. All disturbed riverbank areas would be rehabilitated with native vegetation.
Floodplain and wetland impacts	<p>No wetlands would be filled by the proposed project. The preliminary design at Settles Bridge was, however, modified to avoid a 0.01 acre palustrine forested wetland in the area of the proposed parking lot. The proposed parking lot would be constructed adjacent to, but not within, this wetland.</p> <p>Construction of all seven sites will occur within the 100-year floodplain, because the project requires immediate river access. Standard best management practices will be employed to minimize soil erosion during construction that might affect adjacent wetlands and floodplain areas.</p>

Construction and operation of the proposed river access facilities would minimize the use of non-designated informal trails and help minimize further soil erosion and vegetation damage.

Construction and operation of the proposed river access facilities would allow visitors more desirable, convenient, and safe ways to access the river.

Construction and operation of the proposed river access facilities would increase the available beneficial uses of the park through providing improved river access.

The access facilities have been designed to minimize flow disturbance in the river and to minimize soil erosion.

COMPARISON OF THE EFFECTS OF THE ALTERNATIVES

Table 4 presents a summary of the effects of the alternatives as presented in the “Affected Environment, Evaluation Methodology, and Environmental Consequences” section of this environmental assessment. This section also provides a detailed discussion of the methodology used to assess effects of the two alternatives. Potentially adverse impacts could result from implementation of the preferred alternative during construction. These would be mitigated by implementation of appropriate best management practices at each site (Table 3). The overall long-term effects of the proposed project would result in long-term beneficial effects on the environment because the existing deteriorated and eroded sites would be stabilized. The project would also have a beneficial long-term effect on the quality of the visitor experience and safety.

Table 4
Summary of the Impacts of the Alternatives

Impact Topic	Alternative A (No Action)	Alternative B (Preferred Alternative)
Soils	<p>Implementation of the No Action/Continue Current Management Alternative would result in long-term, minor, adverse direct effects on soils at each of the river access sites. The existing stream banks would continue to erode and the soil conditions at the existing boat ramps would continue to degrade over time. At the Settles Bridge site, no facility is currently in place and none would be constructed under the No Action/Continue Current Management Alternative. Under the No Action/Continue Current Management Alternative, soil conditions would remain in their current state at Settles Bridge, with erosion occurring in areas affected by non-designated informal trails primarily. The cumulative adverse effects of operations on soils would be long-term and negligible, however, because the amount of soil erosion would be extremely small in relation to the amount of erosion generated by all other sources inside and outside the park.</p> <p>This alternative would not cause impairment of soil resources in the park.</p>	<p>Alternative B would result in short-term, minor, local, direct adverse effects on soils during construction. These effects would be mitigated by instituting best management practices to control erosion.</p> <p>Construction would result in minor short-term, local, negligible, adverse cumulative effects on soils because of the small area that would be affected.</p> <p>During operation, this alternative would reduce soil erosion as a result of improved facilities. This would result in long-term, minor, local direct and cumulative beneficial effects on soils.</p> <p>This alternative would not cause impairment of soil resources in the park.</p>
Surface Hydrology , Watershed Characteristics and Water Quality	<p>The existing facilities allow uncontrolled runoff to occur across the sites, which would have a minor local, direct and cumulative adverse effects on surface water hydrology. This effect would continue at all seven sites under Alternative A.</p> <p>Alternative A would have negligible, long-term, local, direct and cumulative adverse effects on the physical features of the Chattahoochee River Watershed, or the local watershed in the vicinity of each of the seven sites. The effects of soil erosion are local in nature and limited to each site.</p> <p>Under Alternative A, localized soil erosion, channeling and runoff originating from the seven existing sites would be extremely small in comparison with the effects of the surrounding developed areas and other projects inside the park. Implementation of Alternative</p>	<p>Alternative B would have long-term, local, minor, beneficial, direct and cumulative effects on surface water hydrology by stabilizing the soil along the river at each site. This would occur from construction of new or upgraded boat ramps, retaining walls, trails and parking lots, as well as from the revegetation of the river bank adjacent to the proposed facilities.</p> <p>Alternative B would have negligible, long-term, local, direct and cumulative effects on watershed characteristics by stabilizing a small portion of the local watershed in the vicinity of each facility.</p> <p>During construction, Alternative B would result in short-term, local, minor, adverse, and direct effects on</p>

Table 4 (Continued)
Summary of the Impacts of the Alternatives

Impact Topic	Alternative A (No Action)	Alternative B (Preferred Alternative)
	<p>A, would therefore result in a negligible, adverse, long-term cumulative effect on surface water quality.</p> <p>This alternative would not cause impairment of surface hydrology, watershed characteristics and water quality in the park</p>	<p>water quality. Construction activities under Alternative B would result in a minor short-term increase in surface water runoff and soil erosion due to the disturbance of the sites. Best management practices and temporary coffer dams would be employed in all construction areas to control and minimize the amount and quality of runoff during construction.</p> <p>During operation, each site would be more stabilized as compared to No Action/Continue Current Management Alternative. The water quality of the runoff from each site would be improved. Alternative B would therefore have a long-term, local, minor, beneficial, direct effect on water quality.</p> <p>The cumulative adverse effects of runoff related to stormwater runoff from development outside the park on surface water hydrology and watershed characteristics would continue to increase under Alternative B and is beyond the control of the park.</p> <p>This alternative would not cause impairment of hydrology, watershed characteristics and water quality in the park.</p>

Table 4 (Continued)
Summary of the Impacts of the Alternatives

Impact Topic	Alternative A (No Action)	Alternative B (Preferred Alternative)
Wetlands and Floodplains	<p>Construction or operation of new river access facilities would not occur under the No Action/Continue Current Management alternative, and therefore, this alternative would have no effects on any wetlands in the park. No plans for placement of structures in wetlands are planned in the future by the park. Continued operation of the river access facilities at the existing sites would not affect wetlands.</p> <p>All seven of the proposed river access facilities would continue to be located within the 100-year floodplains of the Chattahoochee River. Alternative A would have negligible, long-term, adverse direct and cumulative effects on floodplain values.</p> <p>Some future park structures could be built and operated within floodplain areas under the No Action/Continue Current Management Alternative. These would result in minor, long-term, adverse direct and cumulative effects on floodplain values.</p> <p>This alternative would not cause impairment of wetland and floodplains resources in the park.</p>	<p>Alternative B would not affect wetlands at any of the proposed river access facility sites. The total acreage of disturbed land in the floodplain would total less than eight acres, or 0.08 percent of the total park area. Construction would therefore have a long-term, local, negligible, adverse, direct effect on floodplain functions and values. During operation, the areas occupied by the proposed river access facilities would cause a negligible, long-term increase in surface runoff in comparison with the No Action/Continue Current Management Alternative because some of the new facilities would be paved, but the total area would be very small in comparison with the total area of the park.</p> <p>The combined effect of the past, ongoing and foreseeable future construction projects in the park with the additional 8 acres of potential maximum disturbed area caused by the proposed project would result in negligible, long-term, adverse cumulative effects on wetland and floodplain values.</p> <p>This alternative would not cause impairment of wetlands and floodplain resources in the park.</p>

Table 4 (Continued)
Summary of the Impacts of the Alternatives

Impact Topic	Alternative A (No Action)	Alternative B (Preferred Alternative)
Aquatic Resources	<p>Under Alternative A, no additional river access facilities would be constructed. Soil erosion and runoff from the existing sites would continue to occur at the existing river access sites. However, there is no indication that access facility operations are having adverse effects on this resource. Effects of nonpoint runoff, including sedimentation, have a far greater effect on aquatic life in the Chattahoochee River. Therefore, Alternative A was estimated to have a long-term, negligible, adverse direct effect on aquatic resources.</p> <p>The amount of runoff affecting water quality and aquatic life would be very small in comparison with the combined effects of past, ongoing, or foreseeable future actions inside or outside the park, resulting in negligible, long-term adverse cumulative effects on aquatic resources.</p> <p>This alternative would not cause impairment of aquatic resources in the park.</p>	<p>Construction would have a long-term, minor, local, direct adverse effect on fish and benthic invertebrate populations because of the small relative area involved, because the populations of benthic invertebrates and fish at the majority of the sites are characterized by relatively low density and diversity, and because fish and benthic invertebrate populations would recover relatively quickly (generally less than one year). Potentially adverse effects of soil erosion on aquatic resources would be mitigated by implementation of best management practices.</p> <p>During operation, water quality would revert to baseline conditions at each site after the areas are stabilized by the construction of the new ramps, and other facilities. Alternative B would therefore have negligible, beneficial, local, long-term effects on aquatic resources during operation.</p> <p>Alternative B would have negligible, short-term, local, adverse cumulative effects on aquatic resources during construction and operation because of the small overall effect of expected environmental changes in relation to past, ongoing, and reasonably foreseeable actions inside and outside of the park.</p> <p>This alternative would not cause impairment of aquatic resources in the park.</p>

Table 4 (Continued)
Summary of the Impacts of the Alternatives

Impact Topic	Alternative A (No Action)	Alternative B (Preferred Alternative)
Terrestrial Ecological Resources	Under Alternative A, no additional river access facilities would be constructed and operated, and degradation of terrestrial ecological habitats (forest and wildlife resources) would increase over time at the existing facilities. These effects would constitute a minor, adverse, local long-term effect on terrestrial ecological resources. The combined effect of habitat degradation at the existing sites with the effects of other park projects and development outside the park on terrestrial ecological resources would be highly localized, and would constitute a negligible, long-term, adverse cumulative impact.	<p>Less than one acre of mesic hardwood floodplain habitat would be eliminated during construction at the Jones Bridge and Settles Bridge sites. No other terrestrial habitat would be disturbed at any of the other five sites. The effect of construction at these two sites would therefore result in a minor, local, adverse, long-term, direct effect on terrestrial ecological resources. No terrestrial ecological resources would be impacted at any other site. The overall direct effect of construction of all seven sites would therefore be minor, long-term, and adverse. The overall cumulative effect of construction for all seven sites would be negligible, long-term and adverse in relation to the overall effect of expected environmental changes caused by existing, ongoing, and reasonably foreseeable actions.</p> <p>The project would have no direct or cumulative effects on terrestrial ecological resources during operation since there would be no land disturbing activities during operation.</p> <p>This alternative would not cause impairment of terrestrial ecological resources in the park.</p>
Visitor Experience and Safety	Visitors would continue to have opportunities for passive and active forms of recreation at the existing river access facilities. However, wait times and crowding would increase due to the lack of efficiently designed facilities. This would constitute a long-term, negligible, beneficial, direct and cumulative effect. However, this alternative would have long-term, moderate adverse effects on the visitor experience and safety due to the direct and cumulative effects of deteriorating facilities.	During construction, the effects on visitor experience and safety would be minor, local, adverse, short-term, and direct. During operation, the effects on visitor experience and safety under Alternative B would be long-term, local, moderate, beneficial, and direct. Visitors would have easier access to the river, fewer non-designated informal trails would be used, resulting in less soil erosion, wait times and crowding

Table 4 (Continued)
Summary of the Impacts of the Alternatives

Impact Topic	Alternative A (No Action)	Alternative B (Preferred Alternative)
		<p>would be less because of the more efficient facilities, and increased visitor use of the facilities would result. Visitor safety would also be improved.</p> <p>The project would have a long-term, minor, beneficial cumulative effect on visitor experience and safety in the park.</p>
Transportation/Access	<p>Alternative A would have no direct or cumulative effect on transportation patterns and volumes in the Atlanta Region.</p> <p>The existing river access facilities, despite the fact that they are deteriorating, would continue to attract increasing numbers of canoers and motor boaters to the park. This would constitute a moderate, long-term, adverse, direct and cumulative effect on access.</p>	<p>Alternative B would result in a negligible, long-term, local, adverse direct and cumulative local effect on transportation. Alternative B would provide improved, efficient and safe access to the river for hikers and boaters at seven locations located along the full 48-mile length of the park. Alternative B would therefore have a moderate, long-term, beneficial, local, direct and cumulative, local effect on visitor access.</p>
Recreation	<p>Under Alternative A, visitors would have to use the existing deteriorating river access facilities, which are crowded, inefficient and unsafe. This would constitute a moderate, long-term, local, adverse effect on recreation in the park, as visitors are limited to use of these facilities.</p> <p>Alternative A would result in a moderate, long-term, local, adverse cumulative effect on recreation across the 48-mile park because several deteriorating and inefficient river access facilities would continue to be operated.</p>	<p>Alternative B would have moderate, long-term, beneficial, local, direct and cumulative effects on recreation in the park because visitors would be provided with safe, efficient and attractive river access facilities at seven new or upgraded facilities, which extend the full length of the park. The new facilities would reduce the time required to access the river by boaters and also improve the quality of land-based recreation along the river by providing boardwalks, trails and viewing platforms.</p>

Table 4 (Continued)
Summary of the Impacts of the Alternatives

Impact Topic	Alternative A (No Action)	Alternative B (Preferred Alternative)
Socioeconomics	Under Alternative A, no additional facilities would be constructed at the proposed sites. This would result in a minor, short-term, local, adverse effect on the local economy as a result of not issuing contracts to design and build new improved facilities. The combined effect of this action would constitute a negligible, local, adverse long-term cumulative impact of the social and economic characteristics of the area.	Alternative B would have long-term, local, minor, beneficial direct effects on the economy of the area, as a result of funding of the project. The project would have no effect on population characteristics in the area surrounding the park or the Atlanta region.
Quality of the Urban Environment	If the proposed project is not constructed and operated, there would be a moderate, direct, local, adverse long-term effect on the quality of the urban environment, because the present facilities would be allowed to deteriorate further. Visitors to the park would be allowed to continue to use the degraded boat ramps, trails, and related facilities. The overall quality of the urban environment would be reduced as a result. The cumulative effect of not building the proposed facilities with the effects of all other foreseeable park facilities and developments in the area surrounding the park would be negligible, local and long-term.	The quality of the urban environment would be improved because visitors would be able to use the new, safe, and aesthetically pleasing improved facilities. The proposed facilities would result in a long-term, minor, beneficial direct effect on the quality of the urban environment.

AFFECTED ENVIRONMENT, EVALUATION METHODOLOGY, AND ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

This section describes the existing conditions at each of the seven proposed river access facility sites, the methods used to assess potential effects of the two alternatives on these resources, and an assessment of the potential environmental effects of each of the two alternatives. The section is organized according to impact topics defined in the alternatives section. Only those impact topics retained for further consideration in the environmental assessment are included in this section.

The National Environmental Policy Act requires consideration of context, intensity and duration of effects, indirect effects, cumulative effects, and measures to mitigate effects. The effects of the proposed river access facilities in this environmental assessment are therefore defined using these terms. Where the intensity of effects is estimated to be of moderate or greater intensity, National Park Service policy also requires that the potential for “impairment” of resources be defined in all environmental documents.

AFFECTED ENVIRONMENT

This section describes the characteristics of the affected environment at each of the proposed river access facility sites. The discussion which follows focuses on the conditions present at each of the seven proposed river access facilities. This information is based on a field survey conducted in June, 2004 by the National Park Service staff (NPS 2004b,d), an additional survey conducted by Parsons (Parsons 2004), and a wetland delineation at the Settles Bridge site conducted by Register & Associates, Inc., in October, 2004 (Register & Associates, Inc., 2004).

NATURAL RESOURCES

Soils

All of the soils associated with the seven river access sites are located in floodplain areas immediately adjacent to the Chattahoochee River. Floodplain soils in the park belong primarily to the Congaree-Chewacla-Wehadkee association and the Cartecay-Toccoa association, and are located on nearly level areas along the Chattahoochee River and some of its tributaries (NPS 1989; NPS 2000b). These soils are typically highly erodable, and uncontrolled exposure of such soils has resulted in accelerated erosion and attendant sediment and siltation in the Chattahoochee River (NPS 1989; NPS 2000b).

Surface Hydrology, Watershed Characteristics, and Water Quality

The watershed of the Chattahoochee River is relatively long and narrow, which allows stormwater to reach the river quickly through overland sheet flow and via permanent and/or intermittent streams. This, combined with the fact that the park is surrounded by rapidly developing urban and suburban areas, results in a major potential for soil erosion during storm events within the park, and at each of the proposed seven river access facility sites. Because the sites are located immediately adjacent to river at lower elevations, there is a high potential for soil erosion to occur. The existing sites have also been overused by visitors to the point where the vegetation has been eliminated and bare soil has been exposed, further increasing erosion problems at the existing sites.

The flow of the Chattahoochee River is dominated by controlled releases from Buford Dam, which is managed by the Mobile District, US Army Corps of Engineers. The dam was constructed in 1957 by the US Army Corps of Engineers. Flow in the river is also affected significantly by storm events that contribute large amounts of water to the river via overland flow and from the major tributaries. The Corps of Engineers is required to maintain a minimum flow of 750 cfs at all times in order to maintain water quality, protect aquatic life in the river, and to provide electrical power during peak demand periods. Water is released in widely varying amounts from the dam on a schedule that is regulated by the US Army Corps of Engineers, and designed to provide “peaking” power for the area electrical grid. These surges create rapid and large (up to five feet) variations in water levels and current velocities downstream of Buford dam. These “surges” are most noticeable within the park, and become less and less noticeable farther downstream (NPS 2000b). The surges have resulted in significant erosion of the riverbanks for as far as 20 miles downstream, significant widening of the river, and an increase in the number of trees falling into the river (NPS 2000b). Releases from Buford Dam therefore have a major influence over water levels at the proposed river access facilities above the Bull Sluice Lake dam. This would include the proposed sites at Settles Bridge, Abbots Bridge, and Jones Bridge.

The proposed river access facility sites below Morgan Dam are affected by a different set of hydrologic factors. Morgan Falls Dam, located at river mile 312.6, was constructed in 1902-1904, and created Bull Sluice Lake, the only lake within the park. This is a very shallow lake that has become filled prematurely with sediment rapidly over time, due to the large amount of suspended solids entering the river from nonpoint runoff above Morgan Falls Dam, water level fluctuations are less than above the dam. These hydrological conditions apply to the Johnson Ferry North, Sandy Point at Palisades, Whitewater Creek at Palisades, and Paces Mill sites.

Water quality of the Chattahoochee River and tributary streams within the park has been and continues to be affected by various sources of point and nonpoint source pollution. However, although the Chattahoochee River within the park does have water quality problems as described in this section, the Georgia River Care 2000 assigned an “outstanding” rating to the segment of the river within the park. This rating is based on the assignment of this mainstem section of the river as a secondary trout stream. A secondary trout stream is one that is capable of supporting trout throughout the year, but which does not support naturally reproducing populations. This rating is currently being reassessed by the Georgia EPD in view of the recent finding of naturally reproducing brown trout in the upper portion of the Chattahoochee River within the park (please refer to section entitled “Aquatic Resources of the Chattahoochee River”).

Water quality in the Chattahoochee River and tributary streams within the park is protected under law by Georgia’s water use classifications and standards, applied to Georgia’s interstate waters in 1972. These regulations include standards for fecal coliform bacteria, dissolved oxygen, pH and temperature for drinking water, recreation and fishing. Generalized visual water quality criteria have also been established and apply to the park. The Georgia Rules and Regulations for Water Quality Control, Chapter 391-3-6-.03, Water Quality Standards, established standards for toxic materials, including metals and other inorganic compounds, toxic priority pollutants, pesticides and herbicides.

Section 305(b) of the Clean Water Act requires each state to submit an annual report that identifies waters in the state that do not meet their “designated” uses. Waters of the

Chattahoochee River within the park are designated as being suitable for “drinking water, recreation, and fishing”. However, many tributary streams in the park do not meet these designated uses (NPS 2000b). This is due to several sources of pollution, including wastewater treatment plants, sewer pipeline leaks and breaks, combined sewer overflows and sanitary sewer overflows, spills of other materials, and nonpoint runoff (NPS 2000b).

These sources of pollution have affected water quality in a variety of ways. The following is a brief overview of the major water quality issues of concern, and how they relate to each of the seven proposed river access facilities:

Fecal Coliform Bacteria: Failure to meet the fecal coliform standard is the most commonly listed cause of “non-support” of designated uses in the park and the Atlanta region. Elevated fecal coliform levels have been recorded in the majority of streams within the park and the Chattahoochee River. Fecal coliform counts in the vicinity of the Johnson Ferry North, Sandy Point at Palisades, Whitewater Creek at Palisades, and Paces Mill sites are higher on the average as compared with those at Settles Bridge, Abbots Bridge and Jones Bridge.

Levels of *E. coli*, a type of fecal coliform bacteria, are monitored in the river on an ongoing basis by the “BacteriALERT” program, a cooperative bacteria monitoring project and public notification system. The results of the BacteriALERT program provide park visitors with a detailed summary of the nature and extent of the river's bacteria problems. During FY04 (October 1, 2003- September 30, 2004), *E. coli* levels at Medlock Bridge were out of compliance with Environmental Protection Agency (EPA) standards for recreational waters 17 out of 123 samples (14%). During FY04, *E. coli* levels at Paces Ferry were out of compliance with EPA standards 33 out of 123 samples (27%).

Other Pathogens: Other pathogens occurring in the park that can cause human illness include various other species of bacteria, viruses, and protozoans. Levels of these other types of pathogens would also be expected to be higher in the vicinity of the proposed river access facilities lower in the park.

Metals in Water and Sediments: Some tributary streams in the park are characterized by elevated levels of lead, copper, zinc or cadmium associated with urban and suburban runoff, and/or from wastewater and industrial sources such as batteries, metal products, industrial discharges, or stack emissions. All of the proposed river access facilities are located immediately adjacent to the main river channel. As a result, sediments in the immediate vicinity of the seven sites are not expected to be characterized by elevated levels of metals.

Water Temperature: Higher temperatures in the river and tributary streams are caused by high levels of sediment suspended in the water introduced from nonpoint runoff, loss of shade trees along streambanks, and wastewater discharges. Higher temperatures cause reductions in dissolved oxygen levels. Lake Lanier also affects water temperatures in the river. River access facilities located above Morgan Falls dam, including Settles Bridge, Abbots Bridge and Jones Bridge, experience colder overall average and seasonal water temperatures as a result of this pattern. Sites located below the Morgan Falls dam, including Johnson Ferry North, Sandy Point at Palisades, Whitewater Creek at Palisades, and Paces Mill sites are much warmer, in

contrast, because of the effect of distance from lake Lanier and the pooling of water in the shallow Bull Sluice Lake above the dam.

Dissolved Oxygen: Water released from Buford Dam is characterized by lower levels of dissolved oxygen, especially during summer when water is released from the deeper levels of the lake. However, due to re-aeration in shoals and through vertical mixing in pools, dissolved oxygen levels in the majority of the river within the park are generally above the minimum 6.0 mg/L level that is desirable for trout streams. The daily average dissolved oxygen standard is 5.0 mg/L, and the minimum standard at any time is 4.0 mg/L (NPS 2000b).

Dissolved oxygen levels at each of the proposed river access sites has not been studied specifically, but is expected to follow this same pattern as described above for the river as a whole.

Erosion/Sedimentation: Runoff during storms carries sediment from construction sites and impervious surfaces such as roads, parking lots, driveways and rooftops into the Chattahoochee River and tributaries. This raises the levels of suspended solids in the water, increasing the turbidity levels in receiving streams. Elevated turbidity and sediment levels in streams and the Chattahoochee River are common in the park, especially after storm events. Suspended sediments have an adverse impact on aquatic life directly by clogging fish gills and filling in benthic habitat in pools and riffles. Elevated turbidity also increases stream temperatures and lowers dissolved oxygen levels. Sediment particles carry pesticides, herbicides, metals and grease and oil into receiving streams and the river.

The streambanks at all seven sites have been disturbed over the years to varying degrees by heavy human use. All seven sites therefore have a relatively high potential for soil erosion.

Nutrients: Nutrients such as nitrates and phosphates, as well as organic loads are flushed into the river from lawns, domestic animal sources, and exposed soil at construction sites (NPS 2000b). Generally, nitrate and nitrite levels increase as a function of increasing distance downstream in the Chattahoochee River due to introduction of treated wastewater and nonpoint runoff (NPS 2000b). Nutrient levels in water at each of the seven proposed river access sites would be expected to increase with increasing distance downstream.

Pesticides and Herbicides: Pesticides and herbicides from lawn treatment and agricultural activities enter area streams and the Chattahoochee River, with potentially detrimental effects on aquatic life. Concentrations of insecticides often exceed the required criteria to protect aquatic life (NPS 2000b). Pesticide levels are generally below existing drinking water standards, however. Levels of pesticides and herbicides are expected to increase as the distance downstream from Buford Dam increases, due the increasing influence of nonpoint runoff. Consequently, levels of pesticides and herbicides in water at each of the seven proposed river access sites would be expected to increase with increasing distance downstream. However, as previously stated, levels are generally below existing drinking water standards throughout the park.

Accumulation of Chemicals in Fish: Sampling of fish in the Chattahoochee River was conducted in 1995 by the Georgia EPD for 43 parameters, including pesticides, herbicides, PCBs and organic substances. Of the list of 43 parameters, levels of mercury, PCBs and chlordane have been measured in fish from some locations within the park above the EPA - and State of Georgia - recommended fish consumption guidelines (NPS 2000b). EPD recommended a set of fish consumption guidelines specifically for mercury, PCBs and chlordane in the Chattahoochee River from Buford Dam to Morgan Falls Dam, and a separate set of recommendations for the river below Morgan Falls Dam (NPS 2000b). These guidelines are revised annually based on ongoing sampling results, and would apply to each of the seven proposed river access facilities, depending on whether they were located above or below Morgan Falls Dam.

Sand and Gravel Mining: Approximately eight percent of the area within the park is subject to sand and gravel mining. The majority of this activity occurs in the vicinity of McGinnis Ferry Road, Abbots Bridge, and Island Ford areas. Mining does not occur in the vicinity of any of the river access facilities except Abbots Bridge. Sand and gravel mining in the park is regulated by the USACE under Section 404 of the Clean water Act. The NPS issues a Special Use Permit for these operations in the park. This process is under review by the NPS to determine if other alternative approaches may be more suitable.

Wetlands and Floodplains

Wetlands and Other Waters of the United States

The Clean Water Act of 1977 (33 U.S.C. s/s 1251 et seq.) and Executive Order 11980 identify wetlands as national natural assets. These orders direct federal agencies to avoid the occupation, adverse modification, or degradation of wetlands.

Wetlands play a numerous important roles in maintaining the quality of adjacent riverine systems. Wetlands provide natural flood and erosion control, help maintain water quality, and provide important wildlife habitat.

None of the proposed seven river access sites contain any jurisdictional wetlands within the proposed construction footprints. A jurisdictional wetland is one that is determined to be a “water of the United States” as defined by the US Army Corps of Engineers “Routine On-Site Method” (Three Parameter Method)(USACE 1987). A 0.01-acre manmade, palustrine, emergent wetland was identified within the draft design construction footprint of the proposed parking lot at the Settles Bridge site (Register & Associates, Inc. 2004), but the design has been changed to avoid this resource. The parking lot would be constructed adjacent to this resource, however, and no fill would be placed in the wetland. A formal delineation of this wetland was conducted by Register and Associates, Inc (2004). The wetland is dominated by *Juncus effusus* and has developed in a depression on top of a disturbed wastewater pipeline right of way.

An extensive palustrine, emergent wetland was also identified during the surveys within the existing wastewater/fuel pipeline right of way adjacent to the proposed access road and parking lot for the proposed Johnson Ferry river access facility. However, no portions of this wetland are located within the construction footprint for the proposed river access facility at this site.

The Chattahoochee River itself and all tributaries (including intermittent and perennial streams) is classified as a jurisdictional “Waters of the United States” by the US Army Corps of Engineers. A Section 404 Clean Water Act permit would be required for placement of fill or dredged material in Waters of the United States. Waters of the United States also include wetlands that are defined according to the three-parameter method. Either an Individual Permit or a Nationwide Permit would be required from the US Army Corps of Engineers Savannah District for placement of fill or dredged material in jurisdictional areas in the park. The Atlanta Regional Commission also requires a Metropolitan River Protection Act permit for projects involving placement of pervious surfaces within 150 feet of the Chattahoochee River. No clearing or construction of any type is allowed within 50 feet of the river.

Floodplains

All seven of the proposed river access facilities are located on the bank of the Chattahoochee River and are all located directly in the 100-year floodplain. The provisions of Executive Order 11988 of May 24, 1977, Floodplain Management, direct the park to minimize impacts to the natural resources of floodplains. Procedural Manual 77-2: Floodplain Management (NPS 2004c) provides procedures for implementing the National Park Service floodplain policy. It is National Park Service policy to preserve floodplain values and minimize potentially hazardous conditions associated with flooding. To implement NPS floodplain policy, proposed actions are classified into one of three action classes. Depending upon the action class, one of three “regulatory floodplains” applies (100-year, 500-year, or Extreme). If a proposed action is found to be in an applicable regulatory floodplain and relocating the action to a non-floodplain site is considered not to be a viable alternative, then flood conditions and associated hazards must be quantified as a basis for management decision making and a formal Statement of Findings must be prepared. The Statement of Findings must describe the rationale for selection of a floodplain site, disclose the amount of risk associated with the chosen site, and explain flood mitigation plans. The proposed project would represent a Class I Action under the requirements of Procedural Manual 77-2. A Statement of Findings has been prepared for this project and has been made available for public review. The Statement of Findings will be appended to the environmental assessment and will undergo concurrent public review.

Aquatic Resources

Aquatic resources in the Chattahoochee River include fish, benthic invertebrates, aquatic plants, and planktonic organisms (phytoplankton and zooplankton). Within the park, the characteristics of aquatic populations are greatly affected by the patterns of releases of cold water from Lake Lanier and by the introduction of suspended sediment from nonpoint runoff during storms. Since the water is released in surges, scouring of the bottom, increased and variable current velocities, increased erosion and sedimentation of benthic habitats, vertical riverbank erosion, and widening of the river channel occur.

The following is a summary of the key characteristics of aquatic life in the river as it relates the seven proposed river access facility sites:

Fish

Sampling in the southern portion of the park conducted by Mauldin and McCollum (NPS 2000b) showed that bluegills, carp and white suckers were the dominant fish.

Bluegills, carp and white suckers are species characteristic of disturbed habitats characterized by high levels of turbidity, lower dissolved oxygen levels, and eutrophication (NPS 2000b).

Frequent and high flow variability has led to low habitat diversity, and subsequently, to lower fish population diversity. Shallow, slow shoreline habitats, which have been found to be the prime habitat for most fish species, are greatly reduced under these conditions (NPS 2000b).

A total of 39 species of fish have been recorded in the river within the tributaries and main channel of the Chattahoochee River within the park (NPS 2000b). A total of 42 native and eight non-native species of fish have been identified historically from the tributary waters of the Chattahoochee River in the Atlanta area (NPS 2000b). Hess et al. (NPS 2000b) collected 27 fish species in eight tributaries within the park. A rare population of shoal bass was reported in this study as well.

More recent studies by Couch et al. (NPS 2000b) and DeVivo (NPS 2000b) in three tributaries of the park (Sope, Rottenwood and Willeo Creek) documented 25 fish species. Sunfish were the most common species, followed by combinations of minnows, suckers and darters. Combining all three studies, a total of 35 fish species have been recorded in the tributaries of the park. This is less than the ideal number of 50 species that Couch et al. (NPS 2000b) indicated could potentially occur in the area based on Karr's Index of Biotic Integrity (NPS 2000b).

The cold water regime produced by releases from Lake Lanier has made it possible to maintain stocked trout fisheries within the park. The Georgia Department of Natural Resources Fish and Game Division operates this program through their fish hatchery, located just below Buford Dam.

The area between Morgan Falls and Peachtree Creek is managed as a "put-grow-and-take" fishery by annually stocking 3-inch brown and six-inch rainbow trout. The Georgia Department of Natural Resources, with assistance from the National Park Service, is currently managing and enhancing the native shoal bass fisheries (a warm water fish) and rainbow trout.

Natural reproduction of brown trout has been observed recently (Scalley 2001) on gravel bars below Buford Dam and in the upper parts of the river.

The river below Morgan Falls Dam/Bull Sluice Lake is affected by warm water. Warm water "episodes" are classified as those in which the temperature is greater than 23 degrees Celsius. These conditions typically occur after storm events. Above these temperatures, detrimental effects typically occur to trout fisheries (NPS 2000b).

Physical Habitat Simulation (PHABISM) studies by Nestler et al. (NPS 2000b) concluded that the preferences of trout of all life stages for combinations of depth, velocity and cover were all very similar within the park. In general, trout habitat below Buford Dam varies between optimum and near-optimum at lower flows (550-1050 cfs) to a minimum value at higher discharges (approaching 10,000 cfs). Fish habitat is optimal much of the day for several hours under typical conditions (NPS 2000b).

In conclusion, the river access sites associated with the area below Morgan Falls Dam are associated with a warm water fisheries. Sites above Morgan falls are characterized more as a cold water fisheries due to the influence of releases from Lake Lanier.

None of the proposed river access facility sites are located on a tributary to the Chattahoochee River. All of the sites are located on the main channel of the river. Fish populations adjacent to each of the proposed sites are therefore characteristic of the main stem river, as described above.

Benthic Invertebrates, Amphibians and Reptiles

Recent studies have shown that sedimentation and scouring from storm events have reduced the density and diversity of benthic populations in the majority of mainstream Piedmont streams sampled (Parsons 2001 - North Fulton County, covering Johns Creek, Cauley Creek; and CH2MHill 1998 – Gwinnett County, covering Crooked, Level, Richland and Suwanee Creeks). All of the proposed river access sites are characterized by main stem river benthic habitats. No data on benthic invertebrates is available for the individual sites, but it is expected that the diversity and density of benthic organisms at the more southern sites would be low, due to the increasing influence of sedimentation.

Many amphibians (frogs, salamanders) and reptiles (snakes, turtles) occur within the Chattahoochee River and its tributaries. Some species are locally very abundant in springs and seeps and other terrestrial/water interfaces such as backwater pools, sloughs, and the mouths of tributary streams where they enter the mainstem of the river (NPS 2000b). No large pools or sloughs occur at any of the seven river access facility sites. A small (0.01-acre) pool of standing water occurs within the palustrine emergent wetland at the Settles Bridge site. This seasonally flooded pool would be expected to provide good habitat for amphibians. The park has recently completed an inventory of reptiles and amphibians in the park (NPS 2004e).

The Asian rice eel, an exotic non-native species, has been reported in the Chattahoochee River, apparently the result of an aquarium release (NPS 2000b). Another nuisance species that exists in the park includes the swamp eel, which is tolerant of low oxygen conditions. The red shiner, an opportunistic species native to areas west of the Mississippi River, also occurs in the park, and was first recorded in 1978 (NPS 2000b).

Terrestrial Ecological Resources

The following is a description of the terrestrial vegetation and wildlife at each of the seven boat ramp sites, based on the survey conducted by the National Park Service (NPS 2004d). A list of terrestrial vegetation at each of these locations is provided in Appendix A.

Settles Bridge: The proposed site at the Settles Bridge unit consists of a relatively mature mesic hardwood forest located in the floodplain of the Chattahoochee River. The site of the proposed ramp is located on the banks of the Chattahoochee River in a previously undisturbed riparian setting. The two existing non-designated informal trails are located within a naturally forested area. The proposed parking lot is located within a previously disturbed active wastewater pipeline corridor.

The bank of Chattahoochee River at Settles Bridge is very steep and is approximately twenty-five feet in height. The bank is unstable and has eroded significantly. Volunteer events have been held by the National Park service to stabilize the bank in recent years. The non-designated informal trail that runs directly to the bridge then turn northward along the streambank causes erosion and is unsafe because of the steep streambank. Various non-designated informal trails lead down the steep embankment.

Beaver signs were located at this site along the river during the 2004 survey by the National Park Service. Rabbit droppings were located in the project area, and unidentified frogs and tadpoles were located in the emergent wetland located in the wastewater pipeline right-of-way. Several exotic Asian mussel shells were located along the riverbank suggests raccoons and/or river otter could potentially occur in the area. Trout were seen in the river.

Abbotts Bridge: The existing boat ramp is located within a narrow (less than 25 feet) strip of large trees along the river (oaks, birch, and sycamores). The rest of the site consists of old field habitat. The old field would provide good habitat for small mammals and song birds. A portion of the old field has been replanted with native floodplain hardwood trees by the National Park Service. No trees are actually located within the footprint of the construction at this location.

Jones Bridge: The existing boat ramp is located in a relatively mature (approximately 80 years old) mesic hardwood forest along the edge of the Chattahoochee River. The vegetation has been disturbed in the past. There are signs of bank instability and erosion of the sandy loam. Several non-designated informal trails follow the riverbank.

A woodpecker was heard but not identified during the field survey. An eastern water snake, an unidentified frog, and trout were observed. A few small trees and shrubs are located within the footprint of the construction at this location.

Johnson Ferry North: The more upland portion of this site is located in a large field within the 100-year floodplain of the Chattahoochee River. This is the location of the proposed road and graveled parking lot. The proposed access road is located adjacent to an existing riparian restoration zone that has been planted with native floodplain hardwood species. The ramp and associated trail and viewing platform are all located immediately adjacent to the river. The vegetation along the edge of the river has largely been eliminated by visitor foot traffic, and is subject to major erosion. No trees are actually located within the footprint of the construction at this location.

Whitewater Creek at Palisades: The site is located next to a small maintained field with dense forest surrounding the area. The upland portion of this site consists of a mowed and maintained grass field between the parking lot and the existing access point to the river. A dirt path approximately 50 feet in length connects the grass field to the access point through a natural stand of mesic hardwood floodplain forest. No trees are located within the footprint of the proposed path to the access point or within the actual access point itself. The proposed site for the step-down ramp consists of a heavily used and compacted soil devoid of any vegetation.

Paces Mill: The floodplain habitat is in a high visitor use area. A large picnic area is located adjacent to the boat ramp. A few patches of herbaceous ground cover occur within the footprint of the proposed access facility. No trees are actually located within the footprint of the construction at this location. A maintained field with a Georgia Power easement is located north of the footprint. Ornamental holly and other exotic invasive plants are located on less than 20 percent of the survey area but in greater quantity around the existing boat dock.

Sandy Point: The majority of the area within the construction footprint is located within previously cleared/disturbed habitats and an existing non-designated informal trails. The existing access point has been overused by visitors and the soil is bare and highly compacted. The area surrounding the site consists of a relatively mature mesic floodplain forest. River cane occurs along the existing trail and is within the construction footprint, as are a few small trees. Exotic invasive plants are located on less than 20 percent of the entire site, including the area surrounding the proposed construction. The majority of the riverbank adjoining the site is relatively undisturbed. Rocky shoals are located in the river next to the site. No wildlife was observed during the survey, although the area surrounding the site provides good quality wildlife habitat.

Visitor Experience and Safety

Visitor Experience

At the existing river access facilities, the quality of the visitor's experience is relatively low, because the sites have been degraded by overuse and deteriorated access ramps, retaining walls, and trails. The vegetation is heavily disturbed or almost completely eliminated in some areas and the soil is highly compacted and eroded. None of the existing facilities offer suitable boardwalks or viewing platforms of the river. At the Settles Bridge site, visitors are limited to use non-designated informal trails to access the river. This situation provides a low quality visitor experience. In summary, the visitor experience at all seven sites is of low quality either because the existing facilities do not exist, or they are significantly deteriorated. The overall visitor experience is therefore of low quality.

Visitor Safety

The existing points of access to the river offer an increased chance for visitors to have accidents because the ramps and retaining walls are deteriorating, no boardwalks are available, or no constructed facilities are even present. In the majority of cases, access is only provided via highly eroded and/or compacted earth trails down steep banks, and/or slippery surfaces. At the Settles Bridge site, visitors are also limited by walking down a steep 25-foot embankment to reach the river.

Transportation/Access

The park is unusual in that it is located in one of the nation's largest and most rapidly growing urban areas and provides a natural refuge from urban life within a short distance from the homes of millions of urbanites. The park is aligned along a narrow 48-mile river corridor and access to the park is provided by a number of different streets and roadways. Collector and local roadway facilities provide direct access to most of the areas of the park.

The Atlanta Region is the major transportation hub of the southeastern United States. Aside from having the busiest airport in the United States, Atlanta is served by a number of

highways, including US. Interstate 75 (I-75), I-20, Georgia 400, and I-85. In addition, I-285 encircles Atlanta and provides a bypass route around the congested downtown area. The transportation network in the Atlanta Regional Commission's ten-county Atlanta Region consists of more than 16,000 miles of streets and highways. The Interstate Highway system also contains approximately 90 miles of express lanes to assist commuters in traveling to downtown Atlanta.

Access to the river is achieved via a system of paved and unpaved roads. Each of the existing river access facilities is located directly on the river. Access to each of the facilities varies in quality, depending on the location of the site. The current facilities are deteriorating and provide relatively low quality access points to the river for park visitors. Retaining walls are in poor physical condition, and trails connecting to the access facilities are largely non-designated informal trails that are eroding. River bank areas next to the river access facilities have been "loved to death". In these areas, the bank of the river has been completely denuded of vegetation and heavily compacted. All of these features result in difficult, low quality and unsafe access for visitors.

Recreation

The park offers visitors a variety of recreational opportunities, including:

- An extensive system of hiking, jogging, and bicycling trails

- River access points for activities such as fishing, swimming, motorized boating, canoeing, rafting, tubing, wading, and kayaking

- Numerous picnic areas

- Open spaces and natural habitat areas for scenery enjoyment and wildlife viewing/bird watching

- Nineteenth century historic sites and Native American archeological sites

Visitors come to the park for a wide variety of reasons, including viewing scenery, walking, hiking, jogging, bicycling, wildlife viewing/bird watching, communing with or studying nature, studying history, picnicking, fishing, and water sports. Many visitors come to the park on a regular or frequent basis. One of the primary recreational values expressed by visitors is the desire to achieve a sense of solitude within natural areas of the park.

The majority of visitors to the park are primarily local residents of the Atlanta metropolitan area. However, because it is a national park, people from all over the country who are visiting the Atlanta area also visit. The park's recreational visitors come from a wide variety of demographic backgrounds representing many ethnic, racial, and economic groups reflective of the adjacent neighborhoods and society at large. Over 2 million visitors a year visit the park.

No studies have been conducted specifically on the recreational use of the existing river access facilities. Based on the field survey conducted in 2004 by the National Park Service (NPS 2004d) and the National Park Service staff's knowledge of the park, these facilities are used by a variety of visitors. Some visitors use the existing facilities as a means of accessing and viewing the river from the landward edge. For example, many day hikers stop at the access facilities to experience the river. Many others use the existing boat ramps to access to the river in canoes or motorized boats.

Socioeconomics

The park corridor along the Chattahoochee River represents some of the wealthiest areas of metropolitan Atlanta. The average household income in Roswell, for example, is estimated at over \$100,000 per family. The combined real estate value of parcels in census tracts in close proximity to the park has been estimated to be approximately \$15 billion, according to the Trust for Public Land (Trust for Public Land 2001). Studies of economic value comparing waterfront and park-fronting properties to non-park parcels of land show that properties adjacent to rivers and parks are significantly higher. For example, properties and lease rates for New York City real estate facing Central Park, an 1800 acre green space, is as much as 40 percent higher. The economic value of the park to the metropolitan region has not been quantified to date.

The seven proposed river access facilities are also located in relatively affluent areas along the river. Furthermore, recent interest in the use of the park for fishing and other forms of outdoor recreation (picnicking, wading, hiking), are an important socioeconomic feature relating to the use of river access facilities to these residents, as well as to residents in outlying areas. However, because they are deteriorating, the existing facilities do not provide a quality form of access to the river.

Quality of the Urban Environment

The areas surrounding the seven proposed river access facilities include some of the highest quality urban environments in Atlanta. The quality of these urban areas is enhanced by the presence of the park by providing natural river viewsheds and green space adjacent to developed areas.

ENVIRONMENTAL CONSEQUENCES

This section of the environmental assessment first defines the methodology used to assess effects of construction and operation of the proposed river access facilities. The potential environmental consequences of Alternative A, the No Action/Continue Current Management Alternative, and Alternative B, the Preferred Alternative are described. The assessment of impacts is organized according to the previously described impact topics. Only those topics retained for further consideration in the environmental assessment are included in this section.

METHODOLOGY

Impacts were assessed by comparing the effects of construction and operation of Alternative B, the Preferred Alternative, to the effects of Alternative A, the No Action/Continue Current Management Alternative. This was done for each impact topic. This section describes the definitions used in the impact assessment, methods used to assess direct and cumulative impacts, and the assumptions used.

Definitions Used in Impact Assessment

The following definitions were used to evaluate the context, intensity, and duration of effects associated with project alternatives:

Context: The setting in which an impact is analyzed, such as local, parkwide, or region. The Council on Environmental Quality (CEQ 1978) requires that resource analyses include discussions of context.

Effect Intensity: Please refer to Table 5 for definitions of effect intensities used to assess effects of the proposed project. Intensities are included for each resource topic.

Table 5
Impact Thresholds Used in the Assessment of Effects
of the Proposed Project

Soils
Negligible adverse: Short-term and long-term effects of runoff on soils inside the park related to construction, operation, or visitor use are not detectable.
Minor adverse: Short-term and long-term effects on soils inside the park related to construction, operation, or visitor use are slightly detectable with no overall change in soil stability. Structural and non-structural mitigation of potentially adverse effects is implemented via best management practices and resource and other management plans, to minimize potential for adverse effects of soil erosion.
Moderate adverse: Short-term and long-term effects on soils inside the park related to construction, operation, or visitor use are clearly detectable and are expected to have an appreciable effect on soil stability. Mitigation of potentially adverse effects on soil stability is implemented, with effective results.
Major adverse: Short-term and long-term effects on soils inside the park related to construction, operation, or visitor use are substantial and highly noticeable, and are expected to have a permanent effect on soil stability. Mitigation of potentially adverse effects on soils is implemented, but with minimal beneficial results.
Negligible beneficial: Implementation of management plans and best management practices improves soil stability in a very small area. Overall Short-term and long-term effects on soil stability are detectable, but very small.
Minor beneficial: Implementation of management plans and best management practices improves soil stability in a small area inside the park. Overall short-term and long-term effects on soils are clearly detectable.
Moderate beneficial: Implementation of management plans and best management practices improves soil stability in several small areas inside the park. Overall short-term and long-term effects are clearly detectable.
Major beneficial: Implementation of management plans and best management practices improves soil stability in several small areas and/or several large areas inside the park. Overall short-term and long-term effects are clearly detectable.

Duration: Duration of the effects in this analysis is defined as follows:

Short term – when effects occur only during construction or last less than one year;

Long term – when effects last longer than one year.

Direct versus Indirect Impacts: The following definitions of direct and indirect effects were used in this evaluation:

Direct: an effect that is caused by an action and occurs at the same time and place; or

Indirect: an effect that is caused by an action but is later in time, or farther removed in distance, but still reasonably foreseeable.

Cumulative Impact: Cumulative effects are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). The National Park Service (National Park Service 2001b) defines the cumulative effect of that project as the combined effects of all actions: "The cumulative impact analysis may therefore be thought of as the following equation: $X + Y = Z$, where 'X' is the impact of a proposed action on a resource (the incremental effect), 'Y' is the impact of other actions on the same resource, and 'Z' is the cumulative impact." (NPS 2001b).

Method for Assessing Direct Impacts

The analyses of direct impacts involved the following steps:

Identify the extent and type of construction footprint that would be affected at each site (Table 2): For this project, there are several types of construction footprints, as follows:

Areas where soil would be physically disturbed by removal of existing boat ramps, retaining walls or trails, and replacement of these facilities with new, improved structures (boardwalks, viewing platforms, retaining walls, access roads, step-down ramps, boat ramps): In these areas, there would be a potential for soil erosion to occur during construction. These effects would be mitigated by implementation of best management practices, to include silt fencing, filter mats, temporary coffer dams, and river edge revegetation/rehabilitation. The size of the temporary coffer dams has not been determined and are assessed qualitatively in this environmental assessment.

Areas where rip-rap is placed below the mean high water mark to protect the new ramp and retaining walls from erosion: In these areas, there would be a potential for soil erosion during placement of the rip rap. These effects would be mitigated by implementation of best management practices, to include silt fencing, filter mats, temporary coffer dams, and river edge revegetation/rehabilitation.

Existing unpaved parking lots or access roads that would be resurfaced with recycled crushed concrete: There would be no soil disturbance in these areas, and the placement of new crushed gravel would result in a minimization of stormwater runoff and soil erosion.

Existing paved parking lots or access roads that would be repaved: There would be no soil disturbance at these locations and no change in surface water runoff or erosion.

Describe which resources, if any, would be disturbed by construction within the “footprint” as described previously: This was completed by conducting a field survey of each site (NPS 2004d) and qualitatively assessing the types of natural communities present. Available literature was also used.

Identify the intensity (negligible, minor, moderate, or major), context (local, parkwide, regional), duration (short- or long-term), and type (direct or indirect or cumulative) as a result of the proposed action in relation to the No Action/Continue Current Management Alternative: This was completed by qualitatively estimating the land disturbing activities caused by the project for different habitat types (forested areas, wetlands, or previously disturbed/developed areas) using a set of “threshold criteria” for each impact topic (Table 5). In the assessment of effects for each impact topic, the context, duration and type of effect were also defined.

A generalized approach was taken in estimating the number of acres of habitat affected at each site because the plans are not yet finalized and some engineering details may change. Therefore, a “worst case” estimate of the number of acres of impact was made for each site and facility.

Cumulative impacts were assessed by qualitatively comparing the total amount of disturbed land resulting from implementation of the preferred alternative to that which would result from by all other past, present, and reasonably foreseeable future actions. A list of the present and reasonably foreseeable projects includes:

- McGinnis Ferry Bridge/Road widening;
- Johnson Ferry Bridge/Road widening;
- Chattahoochee Nature Center wetland boardwalk replacement;
- Rottenwood Creek trail construction;
- Vickery Creek trail planning;
- Chattahoochee River Environmental Education Center parking lot expansion;
- Chattahoochee River Environmental Education Center sewer line construction;
- Island Ford water line replacement;
- Island Ford maintenance shop network cabling project;
- Hewlett Lodge chimney and roofing repair;

Gold Branch pump station replacement;
Pave access road at Gold Branch;
Remove old building at Gold Branch;
Corps of Engineers emergency siren and transmitter replacement and upgrade in Bowman Island Unit;
Sope Creek Ruins emergency stabilization;
Park staff emergency access boat ramp construction at Sandy Point (Palisades Unit);
Cousins/General Electric trail construction and stream rehabilitation project in Cochran Shoals Unit;
Johnson Ferry wetland restoration projects;
River Call trail connection in Cochran Shoals Unit;
Gwinnett County Settles Bridge Park trail connection in Settles Bridge Unit;
River Club trail connection in Settles Bridge Unit;
Chattahoochee River Bluffs trail connection in Palisades Unit;
Great Park at Morgan Falls (Fulton County Parks Department) development;
City of Roswell boat ramp construction;
Huntscliff dock construction in Bull Sluice Lake;
City of Duluth boat ramp and park development near Rogers Bridge; and
Morgan Falls Dam Federal Energy Regulatory Commission (FERC) relicensing project.

Past actions that affect the cumulative impact assessment include:

Release of water from Buford Dam causes major (5-8 feet in some areas) periodic changes in water level in the river. The effects are defined in detail in the appended Floodplain Statement of Findings. The range of water height variation decreases downstream of the dam, but affects all of the sites to some degree.

Land use outside the long, linear park affects conditions inside the park primarily via non-point runoff of storm water that typically contains elevated levels of total dissolved solids, fecal coliform bacteria, metals, and oil and grease. A very large amount of non-point runoff enters the river during storm events. These effects are outside the control of the park.

Identify whether effects would be beneficial or adverse: Adverse effects were identified by assessing how specific project actions would affect individual resources. Beneficial effects were identified by relating how engineering improvements would result in better visitor experience, improved safety, and improved environmental quality.

Propose mitigation measures to be taken to protect natural and cultural resources, as applicable: Table 3 provides a summary of available mitigation measures that would be employed. Potentially adverse effects of the project would be short-term in nature, and would be mitigated using these measures.

Assumptions Used in Impact Assessment

The following is a summary of the assumptions employed in the assessment of impacts presented in this environmental assessment:

Assumptions for Direct Effects Assessment

Under the No Action/Continue Current Management Alternative, native, new river access facilities would not be constructed under the No Action/Continue Current Management Alternative.

Effects of construction are related to soil disturbing activities, are short-term in duration, and can be controlled by implementation of standard best management practices.

Effects of construction are related directly to the amount of land disturbed during clearing and excavation activities.

Effects of operation include effects associated with use by visitors, including foot traffic, boat launchings, and driving to and from the river access facilities. These are long-term effects. All such effects are assumed to be similar under the No Action/Continue Current Management Alternative because visitation and use of the existing river access facilities will increase whether the proposed improvements are constructed or not.

During operation, the new facilities would result in improved river bank stabilization as a result of the construction of rip-rap, retaining walls, new ramps, and bioengineered/rehabilitated river banks.

The effects of the project were assessed based on the following assumed construction sequence:

Best management practices (BMPs) would be used to control erosion during construction (silt fences, filter cloth, etc...).

A temporary coffer dam would be installed using vertical sheet piles in the river at five of the seven locations to prevent eroded material from escaping to the river. Machinery would work entirely within the existing ramp footprint. No machinery would be allowed to operate in the river.

The existing retaining walls would be removed with appropriate machinery operated in the upland portion of the site.

The existing concrete ramps would be removed using appropriate machinery operated in the upland portion of the site.

New retaining walls and/or step down ramps would be installed using appropriate machinery operated in the upland portion of the site.

New ramps and would be installed using appropriate machinery operated in the upland portion of the site.

Gravel would be placed on parking lots using appropriate machinery operated in the upland portion of the site.

Paths for trails would be cleared as needed and structures made from reclaimed wood and plastic building material would be installed.

The temporary coffer dams would be left in place for the duration of construction period and after construction for a period that would allow stabilization of the construction area by fiber mats, native grass, or other methods. This would assure that erosion of soil from the disturbed construction site would be controlled, and that water quality standards would be met.

Sites would be completely stabilized by planting of native grasses, herbs and trees, and monitored to make sure that the revegetation and stabilization is successful. A monitoring plan will be prepared to assure that the rehabilitation is a success.

No excavation will occur at the site of the restoration of the second existing boat ramp located ½ mile north of the proposed Jones Bridge boat ramp located at the existing parking lot. This abandoned boat ramp would be filled with earth and revegetated.

Assumptions for Cumulative Effects Assessment

Effects of land use surrounding the park result in a very large amount of non-point runoff, which raises turbidity in the river significantly. All of the proposed river access facilities are affected by this runoff. The amount of runoff is very large because the park is long and narrow. The amount of runoff originating from the area around the park is therefore much larger than that generated at each of the seven river access facilities.

Water level changes associated with releases from Buford Dam greatly affect current velocities and can cause erosion at each of the proposed river access facility sites. These changes are considered as a “past” activity that has continued to occur in the present and will continue to occur into the future.

Several ongoing and future construction projects are described that will add to the effects of the proposed river access facilities. These are compared to the effects of the proposed river access facility in a qualitative manner.

Impairment Analysis Methodology

In addition to determining the environmental consequences of the Preferred and No Action alternatives, the 2001 *National Park Service Management Policies and Director's Order #12* (NPS 2001) requires analysis of potential effects to determine if actions would impair park resources. An adverse effect to any park resource or value may constitute an impairment. However, an impact would more likely constitute an impairment to the extent it affects a resource or value whose conservation is:

Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;

Key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or

Identified as a goal in the park's Master Plan or general management plan or other relevant National Park Service planning documents.

National Park Service regulations require assessments of impairment for all natural and cultural resource topics. These are provided within the "Environmental Consequences" "Conclusion" sections of this environmental assessment.

ENVIRONMENTAL IMPACTS OF THE CONTINUE CURRENT MANAGEMENT OR NO ACTION/CONTINUE CURRENT MANAGEMENT ALTERNATIVE

This section assesses the impacts of the No Action/Continue Current Management Alternative (Alternative A) on natural resources of the park. Assessments of the effects of the No Action/Continue Current Management Alternative on soils, surface hydrology, watershed characteristics and water quality, wetlands and floodplains, aquatic resources, terrestrial ecological resources, visitor experience and safety, transportation/access, recreation, socioeconomics, and quality of the urban environment are included for this alternative.

IMPACTS OF NO ACTION/CONTINUE CURRENT MANAGEMENT ALTERNATIVE ON NATURAL RESOURCES

Impacts of Alternative A on Soils

Impact Topic Analysis

Under the No Action/Continue Current Management Alternative, the soils along the river bank at each of the river access points would continue to erode due to visitor use. The river would continue to erode soil at each site and the riverbank would not be rehabilitated under this alternative. This alternative would therefore result in long-term, local, minor, adverse, direct effects on soils at each of the seven sites.

Because of the small area involved at each site, these effects would be highly localized in extent. This was the basis for assigning a minor intensity level for this impact topic under Alternative A.

Cumulative Impacts on Soils

Under the No Action/Continue Current Management Alternative, the park would not construct and operate any new river access facilities, nor would any such facilities be upgraded. Other projects that are presently planned in the park would be constructed and operated. The total amount of disturbance resulting from construction of these projects would be relatively small. Alternative A with would therefore not result in any cumulative effects on soils. This would constitute a negligible, long-term, adverse cumulative effect.

Conclusions

Implementation of the No Action/Continue Current Management Alternative would result in long-term, minor, adverse direct effects on soils at each of the river access sites. The existing stream banks would continue to erode and the soil conditions at the existing boat

ramps would continue to degrade over time. At the Settles Bridge site, no facility is currently in place and none would be constructed under the No Action/Continue Current Management Alternative. Under the No Action/Continue Current Management Alternative, soil conditions would remain in their current state at Settles Bridge, with erosion occurring in areas affected by non-designated informal trails primarily. The cumulative adverse effects of operations on soils would be long-term and negligible, however, because the amount of soil erosion would be extremely small in relation to the amount of erosion generated by all other sources inside and outside the park.

This alternative would not cause impairment of soil resources in the park.

Impacts of Alternative A on Surface Hydrology, Watershed Characteristics and Water Quality

Impact Topic Analysis

The existing facilities allow uncontrolled runoff to occur across the sites, which has a minor local, direct adverse effect on surface water hydrology. This effect would continue at all seven sites under Alternative A. Because of the small area involved at each site, these effects would be highly localized in extent. This was the basis for assigning a minor intensity level for this impact topic under Alternative A.

Alternative A would have a negligible, long-term, local, direct adverse effect on the physical features of the Chattahoochee River watershed, or the local watershed in the vicinity of each of the seven sites. The sites encompass a very small area of the total park and local watersheds and have a small localized effect on surface water hydrology, watershed characteristics, and water quality.

Under the No Action/Continue Current Management Alternative, surface water runoff would continue to erode the existing sites, causing continued channeling, erosion, and increased input of dissolved solids to the river. Use of non-designated informal trails in the vicinity of the proposed river access facilities would continue to increase over the years as the numbers of visitors to the park increases. These combined effects would cause elevated levels of overland sheet flow of water during storm events, further eroding the existing sites. Alternative A would have direct, adverse, long-term, local, minor effects on water quality because the existing conditions of soil erosion and runoff over the river access facility sites would most likely continue.

Cumulative Impacts

The existing facilities allow uncontrolled runoff to occur across the sites, which has a minor local, cumulative, adverse effect on surface water hydrology. This effect would continue at all seven sites under Alternative A.

Alternative A would have a negligible, long-term, local adverse cumulative effect on the physical features of the Chattahoochee River watershed, or the local watershed in the vicinity of the seven sites. The effects of soil erosion are local in nature and limited to each site.

Under Alternative A, localized soil erosion, channeling and runoff originating from the seven sites would be extremely small in comparison with the effects of the surrounding developed areas and other projects inside the park. Implementation of Alternative A, would

therefore result in a negligible, adverse, long-term cumulative effect on surface water quality.

Conclusions

The existing facilities allow uncontrolled runoff to occur across the sites, which would have a minor local, direct and cumulative adverse effects on surface water hydrology. This effect would continue at all seven sites under Alternative A.

Alternative A would have negligible, long-term, local, direct and cumulative adverse effects on the physical features of the Chattahoochee River Watershed, or the local watershed in the vicinity of each of the seven sites. The effects of soil erosion are local in nature and limited to each site.

Under Alternative A, localized soil erosion, channeling and runoff originating from the seven existing sites would be extremely small in comparison with the effects of the surrounding developed areas and other projects inside the park. Implementation of Alternative A, would therefore result in a negligible, adverse, long-term cumulative effect on surface water quality.

This alternative would not cause impairment of surface hydrology, watershed characteristics and water quality in the park

Impacts of Alternative A on Wetlands and Floodplains

Impact Topic Analysis

Construction or operation of new river access facilities would not occur under the No Action/Continue Current Management Alternative. Wetlands and floodplains would continue to be managed as they are currently. No plans for placement of structures in wetlands are planned in the future by the park for any other projects. Continued operation of the river access facilities at the existing sites would not affect wetlands. All seven of the proposed river access facilities would continue to be located within the 100-year floodplains of the Chattahoochee River. Water quality would continue to be affected by the existing facilities, but no other types of effects on floodplain values would occur under Alternative A. Alternative A would have negligible, long-term, adverse effects on floodplain values (flood storage/retention, water quality, wildlife).

Some future park structures could be built and operated within floodplain areas under the No Action/Continue Current Management Alternative. These would result in minor, long-term, adverse direct effects on floodplain values.

Cumulative Impacts on Wetlands and Floodplains

Construction or operation of new river access facilities in wetlands would not occur under the No Action/Continue Current Management Alternative, and therefore, this alternative would have no cumulative effects on wetlands.

All seven of the proposed river access facilities would continue to be located within the 100-year floodplains of the Chattahoochee River. Alternative A would have negligible, long-term, adverse cumulative effects on water quality under Alternative A.

The following past, ongoing or reasonably foreseeable future park projects could be implemented within floodplain areas under the no action alternative. These are as follows:

- Chattahoochee Nature Center wetland boardwalk replacement;
- Rottenwood Creek trail construction;
- Gold Branch pump station replacement;
- Corps of Engineers emergency siren and transmitter replacement and upgrade in Bowman Island Unit;
- Park staff emergency access boat ramp construction at Sandy Point (Palisades Unit);
- Cousins/General Electric trail construction and stream rehabilitation project in Cochran Shoals Unit;
- Johnson Ferry wetland restoration project;
- River Call trail connection in Cochran Shoals Unit;
- River Club trail connection in Settles Bridge Unit;
- Great Park at Morgan Falls (Fulton County Parks Department) development (boat ramp portion only);
- City of Roswell boat ramp construction;
- Huntscliff dock construction in Bull Sluice Lake;
- City of Duluth boat ramp and park development near Rogers Bridge; and
- Morgan Falls Dam Federal Energy Regulatory Commission (FERC) relicensing project.

All of these except the Johnson Ferry North wetland restoration are projects that would affect a very small part of the total area of the park. These projects primarily include boat docks, boat ramps, and limited trails construction. The Johnson Ferry North wetland project is a wetland restoration that covers approximately 16 acres that would result in a major improvement of habitat within the park.

The effects of continuation of current management practices for construction projects (not including the Johnson Ferry North wetland restoration project) would constitute a negligible, long-term, adverse cumulative effects on wetland and floodplain values under Alternative A, because of the very small total area of impacts involved. The restoration of the Johnson Ferry wetland under the No Action/Continuation of Current Management Alternative will constitute a local, long-term, moderate, beneficial, direct impact.

Conclusions

Construction or operation of new river access facilities would not occur under the No Action/Continue Current Management alternative, and therefore, this alternative would have no effects on any wetlands in the park. No plans for placement of structures in wetlands are planned in the future by the park. Continued operation of the river access facilities at the existing sites would not affect wetlands.

All seven of the proposed river access facilities would continue to be located within the 100-year floodplains of the Chattahoochee River. Alternative A would have negligible, long-term, adverse direct and cumulative effects on floodplain values.

Some future park structures could be built and operated within floodplain areas under the No Action/Continue Current Management Alternative. These would result in minor, long-term, adverse direct and cumulative effects on floodplain values.

This alternative would not cause impairment of wetland and floodplains resources in the park.

Impacts of Alternative A on Aquatic Resources

Impact Topic Analysis

Under Alternative A, no additional river access facilities would be constructed. Soil erosion and runoff from the existing sites would continue to occur at each site. However, there is no indication that the existing access facility operations are having an adverse effects on aquatic resources because they cover such a small total area. Effects of nonpoint runoff, including sedimentation, have a far greater effect on aquatic life in the Chattahoochee River. Therefore, Alternative A was estimated to have a long-term, negligible, adverse direct effect on aquatic resources.

Cumulative Impacts on Aquatic Resources

Under Alternative A, no construction activities would be conducted at the existing sites, or Settles Bridge. The amount of runoff affecting aquatic life would be very small in comparison with the combined effects of past, ongoing, and foreseeable future actions inside the park, plus effects of development outside the park (the largest contributor to water quality degradation and accompanying cumulative effects on aquatic resources). Consequently, the No Action/Continue Current Management Alternative would have negligible, long-term adverse cumulative effects on aquatic resources.

Conclusions

Under Alternative A, no additional river access facilities would be constructed. Soil erosion and runoff from the existing sites would continue to occur at the existing river access sites. However, there is no indication that access facility operations are having adverse effects on this resource. Effects of nonpoint runoff, including sedimentation, have a far greater effect on aquatic life in the Chattahoochee River. Therefore, Alternative A was estimated to have a long-term, negligible, adverse direct effect on aquatic resources.

The amount of runoff affecting water quality and aquatic life would be very small in comparison with the combined effects of past, ongoing, or foreseeable future actions inside or outside the park, resulting in negligible, long-term adverse cumulative effects on aquatic resources.

This alternative would not cause impairment of aquatic resources in the park.

Impacts of Alternative A on Terrestrial Ecological Resources

Impact Topic Analysis

Under Alternative A, no additional river access facilities would be constructed and operated. Degradation of terrestrial habitat (mesic hardwood floodplain forest) and soil

erosion could worsen over time at the existing facilities, since no enhancements or improvements would be made. Visitors would continue to use the existing facilities and cause additional compaction of soils and damage to vegetation along the riverbank and along non-designated informal trails. Local habitat degradation would therefore worsen over time at the existing facilities for some wildlife species. There would be no effects for other more mobile and far-ranging species. These effects would be limited to the relatively small area occupied by the existing sites. Alternative A would therefore have a minor, adverse, local long-term effect on terrestrial ecological resources.

Cumulative Impacts on Terrestrial Ecological Resources

Under Alternative A, no construction activities would be conducted within forested areas at the proposed sites. The quality of the terrestrial habitats at the existing sites would degrade over time, however, due to visitor use on non-designated informal trails and along the river bank. Local habitat degradation might worsen over time at the existing facilities for some wildlife species. There would be no effects for other more mobile and far-ranging species. The combined effect of this degradation with the effects of other park projects and development outside the park on terrestrial ecological resources would constitute a negligible, long-term, adverse cumulative impact.

Conclusions

Under Alternative A, no additional river access facilities would be constructed and operated, and degradation of terrestrial ecological habitats (forest and wildlife resources) would increase over time at the existing facilities. These effects would constitute a minor, adverse, local long-term effect on terrestrial ecological resources. The combined effect of habitat degradation at the existing sites with the effects of other park projects and development outside the park on terrestrial ecological resources would be highly localized, and would constitute a negligible, long-term, adverse cumulative impact.

This alternative would not cause impairment of terrestrial ecological resources in the park.

Impacts of Alternative A on Visitor Experience and Safety

Impact Topic Analysis

Under Alternative A, no additional facilities would be constructed at the proposed sites. The area around the stream banks would continue to erode, and the existing boat ramps would continue to physically degrade. Wait times and crowding would increase over time due to the lack of efficiently designed facilities. This alternative does not include any specific actions that would enhance or compensate for visitors experiences. This alternative would have a long-term, negligible, adverse effect on visitor experiences because no new river access facilities would be constructed or operated.

During operation of the park, the overall effect on visitor experience would be a continuation of present conditions and access to available facilities, as park resources allow. This would constitute a long-term, moderate, adverse effect on visitor experience since no new facilities would be available. Visitors would experience increasing wait times and possibly more crowded conditions at the existing inefficient river access facilities.

The existing facilities would continue to be managed as they are currently. Conditions for visitor safety at each site would continue to be the same.

Cumulative Impacts on Visitor Experience and Safety

Under Alternative A, the quality of the experience for the average visitor would decrease. In combination with the lack of other programs under the No Action/Continue Current Management Alternative, this would result in a moderate long-term, moderate, adverse, cumulative effect on the quality of the visitor experience.

Under Alternative A, visitor safety would decrease over time as a result of cumulative effects of the existing boat ramps degrading. This would constitute a long-term, moderate, adverse, cumulative effect, because boat ramps and associated facilities would continue to be in operated in a deteriorated state.

Conclusions

Visitors would continue to have opportunities for passive and active forms of recreation at the existing river access facilities. However, wait times and crowding would increase due to the lack of efficiently designed facilities. This would constitute a long-term, negligible, beneficial, direct and cumulative effect. However, this alternative would have long-term, moderate adverse effects on the visitor experience and safety due to the direct and cumulative effects of deteriorating facilities.

Impacts of Alternative A on Transportation/Access

Impact Topic Analysis

Alternative A would have no effect on transportation patterns and volumes in the Atlanta Region.

The existing river access facilities, despite the fact that they are deteriorating, would attract increasing numbers of canoers and motor boaters to the park as the Atlanta Region continues to grow, causing congestion at the existing facilities. This effectively limits efficient access to the river by visitors. Alternative A was therefore estimated to result in a moderate, long-term, adverse, direct effect on access.

Cumulative Impacts on Transportation/Access

No cumulative effects on local or regional transportation patterns and volumes are expected to occur under Alternative A.

Alternative A would have a moderate, long-term, adverse cumulative effect on visitor access, however, because access would continue to be limited as a result of poor quality, deteriorating facilities throughout the 48-mile long park.

Conclusions

Alternative A would have no direct or cumulative effect on transportation patterns and volumes in the Atlanta Region.

The existing river access facilities, despite the fact that they are deteriorating, would continue to attract increasing numbers of canoers and motor boaters to the park. This would constitute a moderate, long-term, adverse, direct and cumulative effect on access.

Impacts of Alternative A on Recreation

Impact Topic Analysis

Under Alternative A, visitors would have to use the existing deteriorating river access facilities, which are crowded, inefficient and unsafe. Recreational use of the river by boaters and hikers would continue to be of a lower quality as a result of implementation of Alternative A. This would constitute a moderate, long-term, local, adverse direct effect on recreation in the park.

Cumulative Impacts on Recreation

Alternative A would result in a moderate, long-term, local, adverse cumulative effect on recreation across the 48-mile park because several deteriorating and inefficient river access facilities would continue to be operated.

Conclusions

Under Alternative A, visitors would have to use the existing deteriorating river access facilities, which are crowded, inefficient and unsafe. This would constitute a moderate, long-term, local, adverse effect on recreation in the park, as visitors are limited to use of these facilities.

Alternative A would result in a moderate, long-term, local, adverse cumulative effect on recreation across the 48-mile park because several deteriorating and inefficient river access facilities would continue to be operated.

Impacts of Alternative A on Socioeconomics

Impact Topic Analysis

Under Alternative A, no additional facilities would be constructed at the proposed sites. This would result in a minor, short-term, local, adverse effect on the economy as a result of continuing current management practices.

Cumulative Impacts on Socioeconomics

Under the No Action/Continue Current Management Alternative, the proposed project would not be constructed or operated, and the benefits to the local economy would not be realized. However, this would constitute a negligible, local, adverse long-term cumulative effect of the social and economic characteristics of the area.

Conclusions

Under Alternative A, no additional facilities would be constructed at the proposed sites. This would result in a minor, short-term, local, adverse effect on the local economy as a result of not issuing contracts to design and build new improved facilities. The combined effect of this action would constitute a negligible, local, adverse long-term cumulative impact of the social and economic characteristics of the area.

Impacts of Alternative A on Quality of the Urban Environment

Impact Topic Analysis

If the proposed project is not constructed and operated, there would be a moderate, direct, local, adverse long-term effect on the quality of the urban environment, because the present facilities would be allowed to deteriorate further. Visitors to the park would be allowed to

continue to use the degraded boat ramps, trails, and related facilities. The overall quality of the urban environment would be reduced as a result, especially since over 3 million visitors use the park each year.

Cumulative Impacts

The cumulative effect of not building the proposed facilities with the effects of all other foreseeable park facilities and developments in the area surrounding the park would be negligible, local and long-term.

Conclusions

If the proposed project is not constructed and operated, there would be a moderate, direct, local, adverse long-term effect on the quality of the urban environment, because the present facilities would be allowed to deteriorate further. Visitors to the park would be allowed to continue to use the degraded boat ramps, trails, and related facilities. The overall quality of the urban environment would be reduced as a result. The cumulative effect of not building the proposed facilities with the effects of all other foreseeable park facilities and developments in the area surrounding the park would be negligible, local and long-term.

ENVIRONMENTAL IMPACTS OF ALTERNATIVE B – PREFERRED ALTERNATIVE

Impacts of Alternative B on Soils

Impact Topic Analysis

Alternative B would have short-term, local, minor, adverse, and direct construction-related effects on soils at Abbotts Bridge, Johnson Ferry North, Sandy Point at Palisades, Whitewater Creek at Palisades and Paces Mill sites. A total of less than two acres of land would be cleared at all of these sites during construction. Under Alternative B, there would be an increase in soil erosion due to ground disturbance during construction. Effects of construction would be mitigated by instituting best management practices to control erosion.

At the Settles Bridge site, soil erosion would be expected to occur because clearing of land for the construction of the trail and step-down ramp would be conducted in a naturally forested area. This would constitute a short-term, local, minor, adverse direct effect on soils. These effects would be mitigated by instituting best management practices to control erosion.

At Jones Bridge, a short-term, local, minor, adverse, direct increase in soil erosion would result due to the construction of a new boat ramp at a new location 50 feet upstream from existing facility on the banks of the Chattahoochee River. Rehabilitation of the second existing boat ramp ½ mile north of the main parking lot at Jones Bridge would involve placement of fill and no excavation. This area would be revegetated as well. The effects of land clearing and soil erosion would be mitigated by instituting best management practices in all construction areas.

During operation, Alternative B would have long-term, local, minor, beneficial, and direct effects at all seven sites, because this alternative would reduce soil erosion as a result of improved facilities, including rehabilitated riverbank areas.

Cumulative Impacts on Soils

Less than 0.08 percent of the total land in the park would be temporarily disturbed as a result of construction, a very small portion of the total park. In comparison with the effects of all other foreseeable park facilities and developments in the area surrounding the combined effects of the park with all other effects would be very limited. Construction would therefore result in short-term, local, negligible, adverse cumulative effects on soils.

During operation, this alternative would reduce soil erosion as a result of improved facilities, including rehabilitated riverbank areas. During operation, this alternative would result in a long-term, minor, local, cumulative beneficial cumulative effect on soils because all seven sites would be more stabilized than at present.

Conclusions

Alternative B would result in short-term, minor, local, direct adverse effects on soils during construction. These effects would be mitigated by instituting best management practices to control erosion. Construction would result in minor short-term, local, negligible, adverse cumulative effects on soils because of the small area that would be affected.

During operation, this alternative would reduce soil erosion as a result of improved facilities. This would result in long-term, minor, local direct and cumulative beneficial effects on soils.

This alternative would not cause impairment of soil resources in the park.

Impacts of Alternative B on Surface Hydrology, Watershed Characteristics and Water Quality

Impact Topic Analysis

Alternative B would have a long-term, local, minor, beneficial, direct effect on surface water hydrology by stabilizing the soil along the river at each site. This would occur from construction of new or upgraded boat ramps, retaining walls, trails and parking lots, as well as from the revegetation of the river bank adjacent to the proposed facilities.

Alternative B would have a negligible, long-term, local, beneficial direct effect on watershed characteristics by stabilizing a small portion of the local watershed in the vicinity of each facility.

During construction, Alternative B would result in short-term, local, minor, adverse, and direct effects on water quality. Construction activities under Alternative B would result in a minor short-term increase in surface water runoff and soil erosion due to the disturbance of the sites. Best management practices would be employed in all construction areas to control and minimize the amount and quality of runoff during construction. Temporary coffer dams would be constructed to maintain water quality. Other measures would include type C silt fencing in slopes greater than 3 percent, mulching, sedimentation ponds and use of cocoa fiber and seeding of native grasses.

During operation, each site would be more stabilized as compared to the No Action/Continue Current Management Alternative. Runoff would be reduced from the existing unstabilized sites that are currently eroding. The water quality of the runoff from each facility would be improved. Alternative B would therefore have a long-term, local, minor, beneficial, direct effect on water quality.

Cumulative Impacts on Hydrology, Watershed Characteristics and Water Quality

Less than 0.08 percent of the total land in the park would be temporarily disturbed as a result of construction of the proposed project. The combined effects of Alternative B on hydrology, watershed characteristics and water quality with the effects of all other past, ongoing, and foreseeable park facilities and development in the area surrounding the park would result in a short-term, local, negligible, adverse cumulative effect on hydrology, watershed characteristics and water quality.

During operation, this alternative would reduce runoff as a result of improved facilities, including rehabilitated riverbank areas. This alternative would therefore result in a long-term, minor, local, cumulative beneficial effects on hydrology, watershed characteristics and water quality because all seven sites would be more stabilized than at present.

Since the park is located in a rapidly developing urban area, the cumulative adverse effects of runoff related to stormwater runoff from development outside the park on surface water hydrology and watershed characteristics would continue to increase under Alternative B, regardless of what is constructed inside the park. This would constitute a major, adverse, long-term cumulative effect caused by factors largely outside the park's control.

Conclusions

Alternative B would have long-term, local, minor, beneficial, direct and cumulative effects on surface water hydrology by stabilizing the soil along the river at each site. This would occur from construction of new or upgraded boat ramps, retaining walls, trails and parking lots, as well as from the revegetation of the river bank adjacent to the proposed facilities.

Alternative B would have negligible, long-term, local, direct and cumulative effects on watershed characteristics by stabilizing a small portion of the local watershed in the vicinity of each facility.

During construction, Alternative B would result in short-term, local, minor, adverse, and direct effects on water quality. Construction activities under Alternative B would result in a minor short-term increase in surface water runoff and soil erosion due to the disturbance of the sites. Best management practices and temporary coffer dams would be employed in all construction areas to control and minimize the amount and quality of runoff during construction.

During operation, each site would be more stabilized as compared to No Action/Continue Current Management Alternative. The water quality of the runoff from each site would be improved. Alternative B would therefore have a long-term, local, minor, beneficial, direct effect on water quality.

The cumulative adverse effects of runoff related to stormwater runoff from development outside the park on surface water hydrology and watershed characteristics would continue to increase under Alternative B and is beyond the control of the park.

This alternative would not cause impairment of hydrology, watershed characteristics and water quality in the park.

Impacts of Alternative B on Wetlands and Floodplains

Impact Topic Analysis

No wetlands would be affected by Alternative B. A single 0.01-acre palustrine emergent wetland was identified at the Settles Bridge site within the construction footprint of the preliminary design. The parking lot would be constructed immediately adjacent to this resource, but no fill would be placed in the wetland.

All seven facilities would involve construction of river access facilities within the 100-year floodplain, because they are water-oriented facilities and have to be located directly on the river. The total acreage of disturbed land in the floodplain would, however, total less than eight acres, or 0.08 percent of the total park area.

Construction would therefore have a long-term, local, negligible, adverse, direct effect on floodplain functions and values. During operation, the areas occupied by the proposed river access facilities would cause a negligible, long-term increase in surface runoff in comparison with the No Action/Continue Current Management Alternative because some of the new facilities would be paved, but the total area would be small in comparison with the total area of the park.

To comply with National Park Service policies and regulations regarding construction and operation of proposed projects in floodplains, and Floodplain Statement of Finding has been prepared in conjunction with this environmental assessment. The Statement of Findings must be reviewed and approved by the appropriate National Park Service staff and Regional Director prior to implementation of the proposed project. The Statement of Findings will be distributed to the appropriate agencies for review and comment simultaneously with the environmental assessment.

Cumulative Impacts on Wetlands and Floodplains

The park has no current or foreseeable plans to fill any other wetlands in the park. Alternative B would have no adverse cumulative effects on wetlands.

Cumulative effects of the proposed project on floodplains in combination with other past, ongoing or reasonably foreseeable projects inside the park were identified and compared to the effects of the proposed project qualitatively. Projects within the 100- year floodplain are as follows:

- Chattahoochee Nature Center wetland boardwalk replacement;

- Rottenwood Creek trail construction;

- Gold Branch pump station replacement;

- Corps of Engineers emergency siren and transmitter replacement and upgrade in Bowman Island Unit;

- Park staff emergency access boat ramp construction at Sandy Point (Palisades Unit);

- Cousins/General Electric trail construction and stream rehabilitation project in Cochran Shoals Unit;

- Johnson Ferry wetland restoration projects;

- River Call trail connection in Cochran Shoals Unit;

River Club trail connection in Settles Bridge Unit;
Great Park at Morgan Falls (Fulton County Parks Department) development (boat ramp portion only);
City of Roswell boat ramp construction;
Huntscliff dock construction in Bull Sluice Lake;
City of Duluth boat ramp and park development near Rogers Bridge; and
Morgan Falls Dam Federal Energy Regulatory Commission (FERC) relicensing project.

The construction projects listed above (which does not include the Johnson Ferry wetland restoration project) are all relatively small and would result in disturbance of a very small portion of the park. The combined effect of the above-listed construction projects with the additional 8 acres of potential maximum disturbed area caused by the proposed project would result in negligible, long-term, adverse cumulative effects on wetland and floodplain values.

Conclusions

The project would not affect wetlands at any of the proposed river access facility sites. The total acreage of disturbed land in the floodplain would total less than eight acres, or 0.08 percent of the total park area. Construction would therefore have a long-term, local, negligible, adverse, direct effect on floodplain functions and values. During operation, the areas occupied by the proposed river access facilities would cause a negligible, long-term increase in surface runoff in comparison with the No Action/Continue Current Management Alternative because some of the new facilities would be paved, but the total area would be very small in comparison with the total area of the park.

The combined effect of the past, ongoing and foreseeable future construction projects in the park with the additional 8 acres of potential maximum disturbed area caused by the proposed project would result in negligible, long-term, adverse cumulative effects on wetland and floodplain values.

This alternative would not cause impairment of wetlands and floodplain resources in the park.

Impacts of Alternative B: Preferred Alternative on Aquatic Resources

Impact Topic Analysis

Direct effects on aquatic resources resulting from construction would include the following:

Construction of parking lots and trails: These activities would produce surface runoff from disturbed land on construction sites, with potential adverse effects of elevated total suspended solids on fish respiration and covering of benthic invertebrates. These potentially adverse effects would be mitigated by implementation of best management practices.

Installation of temporary coffer dams: This would result in a direct temporary elimination of a very small area of benthic invertebrates and their habitats at these

locations. Cofferdams would be left in place for approximately 3 months at each of the five sites.

Installation of rip rap: In addition to the temporary cofferdams, approximately a tenth of an acre of rip rap would be placed within “waters of the United States” at each of the seven river access facilities (total affected area for all seven sites). This would also result in a direct temporary elimination of a small area of benthic invertebrates and their habitats at these locations.

All of these construction activities would have a long-term, minor, local, direct adverse effect on fish and invertebrate populations because of the small total area of disturbance. In areas disturbed by temporary cofferdams and permanent rip rap, benthic populations would recover relatively quickly. Fish are highly mobile and would move away from the area during construction, and would move back in once the sites are stabilized. Potentially adverse effects of soil erosion on aquatic resources would be mitigated by implementation of best management practices.

During operation, water quality would revert to baseline conditions at each site after the areas are stabilized by the construction of the new ramps, and other facilities. Alternative B would therefore have negligible, beneficial, local, long-term effects on aquatic resources during operation.

Cumulative Impacts on Aquatic Resources

Alternative B would have negligible, short-term, local, adverse cumulative effects on aquatic resources during construction and operation because of the small overall effect of expected environmental changes in relation to existing, ongoing, and reasonably foreseeable actions inside and outside of the park. In addition, each of the sites would be stabilized over the long-term, and the size of the stabilized sites would be very small in relation to the effects of other existing, ongoing, and reasonably foreseeable actions inside and outside the park.

Conclusions

Construction would have a long-term, minor, local, direct adverse effect on fish and benthic invertebrate populations because of the small relative area involved, because the populations of benthic invertebrates and fish at the majority of the sites are characterized by relatively low density and diversity, and because fish and benthic invertebrate populations would recover relatively quickly (generally less than one year). Potentially adverse effects of soil erosion on aquatic resources would be mitigated by implementation of best management practices.

During operation, water quality would revert to baseline conditions at each site after the areas are stabilized by the construction of the new ramps, and other facilities. Alternative B would therefore have negligible, beneficial, local, long-term effects on aquatic resources during operation.

Alternative B would have negligible, short-term, local, adverse cumulative effects on aquatic resources during construction and operation because of the small overall effect of expected environmental changes in relation to past, ongoing, and reasonably foreseeable actions inside and outside of the park.

This alternative would not cause impairment of aquatic resources in the park.

Impacts of Alternative B on Terrestrial Ecological Resources

Impact Topic Analysis

The effects of construction on terrestrial ecological resources under Alternative B would be short-term, negligible, local, adverse and direct, since maximum of less than one acre of naturally forested area would be eliminated at two of the sites. This represents less than 0.01 percent of the total acreage in the park. This total includes mesic hardwood floodplain forest habitat that would be eliminated during construction of the ramp at the Jones Bridge site, and during construction of a step down ramp, boardwalk and trails at the Settles Bridge site. No other terrestrial ecological resources would be affected at the other sites.

Construction activities under Alternative B would therefore result in minor, local, long-term adverse effects on forested areas on an overall basis.

Cumulative Impacts on Terrestrial Ecological Resources

Construction would result in a negligible, long-term and adverse cumulative effect because of the very small amount of forested habitat (less than one acre total) that would be eliminated in relation to the effects of other actions caused by existing, ongoing, and reasonably foreseeable actions, both inside and outside the park.

The project would have no adverse cumulative effects on terrestrial ecological resources during operation since there would be no land disturbing activities during this phase of the project.

Conclusions

Less than one acre of mesic hardwood floodplain habitat would be eliminated during construction at the Jones Bridge and Settles Bridge sites. No other terrestrial habitat would be disturbed at any of the other five sites. The effect of construction at these two sites would therefore result in a minor, local, adverse, long-term, direct effect on terrestrial ecological resources. No terrestrial ecological resources would be impacted at any other site. The overall direct effect of construction of all seven sites would therefore be minor, long-term, and adverse. The overall cumulative effect of construction for all seven sites would be negligible, long-term and adverse in relation to the overall effect of expected environmental changes caused by existing, ongoing, and reasonably foreseeable actions.

The project would have no direct or cumulative effects on terrestrial ecological resources during operation since there would be no land disturbing activities during operation.

This alternative would not cause impairment of terrestrial ecological resources in the park.

Impacts of Alternative B on Visitor Experience and Safety

Impact Topic Analysis

During construction, the effects on visitor experience and safety under Alternative B would be minor, local, adverse, short-term, and direct. Visitors would be deprived of the use of the existing facilities for a brief period of time (approximately three months), and construction activities in the park would have a potential to adversely affect visitor safety. However, safety precautions would be taken during construction to mitigate effects.

During operation, the effects on visitor experience and safety under Alternative B would be long-term, local, moderate, beneficial, and direct. Visitors would have easier access to the river, fewer non-designated informal trails would be used, resulting in less erosion, wait

times and crowding would be less because of the more efficient facilities, and increased visitor use of the existing facilities would result. Visitor safety would also be improved. The previously closed Johns Ferry boat ramp would be reopened, providing increased access to this portion of the river for visitors.

Cumulative Impacts on Visitor Experience and Safety

Alternative B would improve the visitor experience and safety at seven sites that are often used by the public. This would have a long-term, moderate, beneficial cumulative effect on visitor experience and safety in the park since these facilities are frequently visited. No adverse cumulative effects would occur.

Conclusions

During construction, the effects on visitor experience and safety would be minor, local, adverse, short-term, and direct. During operation, the effects on visitor experience and safety under Alternative B would be long-term, local, moderate, beneficial, and direct. Visitors would have easier access to the river, fewer non-designated informal trails would be used, resulting in less soil erosion, wait times and crowding would be less because of the more efficient facilities, and increased visitor use of the facilities would result. Visitor safety would also be improved.

The project would have a long-term, minor, beneficial cumulative effect on visitor experience and safety in the park.

Impacts of Alternative B on Transportation/Access

Impact Topic Analysis

Traffic in the park under Alternative B is not expected to be that much greater than the No Action/Continue Current Management Alternative. A negligible, long-term, adverse direct local effect on transportation was therefore estimated to result from Alternative B.

Alternative B would provide improved, efficient and safe access to the river for hikers and boaters. The new, efficient facilities would be able to handle more visitors, so that the potential for crowding and increased wait times would be reduced. Alternative B would therefore have a moderate, long-term, beneficial, direct, local effect on visitor access.

Cumulative Impacts on Transportation/Access

However, an increase in the use of the improved facilities is not expected to differ from that occurring under the No Action/Continue Current Management Alternative. Therefore, Alternative B is estimated to have a negligible, long-term, adverse, cumulative, local effect on transportation.

Alternative B would provide improved, efficient and safe access to the river for hikers and boaters at seven locations located along the full 48-mile length of the park. Alternative B would therefore have a moderate, long-term, beneficial, cumulative, local effect on visitor access.

Conclusions

Alternative B would result in a negligible, long-term, local, adverse direct and cumulative local effect on transportation. Alternative B would provide improved, efficient and safe access to the river for hikers and boaters at seven locations located along the full 48-mile

length of the park. Alternative B would therefore have a moderate, long-term, beneficial, local, direct and cumulative, local effect on visitor access.

Impacts of Alternative B on Recreation

Impact Topic Analysis

Alternative B would have a moderate, long-term, beneficial, direct, local effect on recreation in the park in comparison with the No Action/Continue Current Management Alternative because visitors would be provided with safe, efficient and attractive river access facilities. The new or upgraded facilities would reduce the time required to access the river by boaters and also improve the quality of land-based recreation along the river by providing boardwalks, trails and viewing platforms.

Cumulative Impacts on Recreation

Alternative B would have a moderate, long-term, beneficial local cumulative effect on recreation in the park because visitors would be provided with new and/or upgraded, safe, efficient and attractive river access facilities at each of seven sites, which extend the full length of the park.

Conclusions

Alternative B would have moderate, long-term, beneficial, local, direct and cumulative effects on recreation in the park because visitors would be provided with safe, efficient and attractive river access facilities at seven new or upgraded facilities, which extend the full length of the park. The new facilities would reduce the time required to access the river by boaters and also improve the quality of land-based recreation along the river by providing boardwalks, trails and viewing platforms.

Impacts of Alternative B on Socioeconomics

Impact Topic Analysis

During construction, the effects on the local economy under Alternative B would be long-term, local, minor, beneficial and direct. Beneficial economic effects would be associated with the funding of the design and construction of the proposed river access facilities.

The project would have no effect on population characteristics in the area surrounding the park or the Atlanta region.

Cumulative Impacts on Socioeconomics

There would be no cumulative effects of any type on socioeconomic features of the area around the park or the Atlanta region.

Conclusions

Alternative B would have long-term, local, minor, beneficial direct effects on the economy of the area, as a result of funding of the project. The project would have no effect on population characteristics in the area surrounding the park or the Atlanta region.

Impacts of Alternative B on Quality of the Urban Environment

The quality of the urban environment would be improved because visitors would be able to use new, improved facilities. The existing facilities are degrading rapidly and are not aesthetically pleasing. The proposed facilities would provide improved, safe and attractive

river access, and therefore would result in a long-term, minor, beneficial, local effect on the quality of the urban environment.

Cumulative Impacts

The proposed facilities would provide a long-term, negligible, beneficial cumulative effect on the quality of the urban environment by providing additional improved, safe and attractive river access facilities along the Chattahoochee River corridor.

Conclusions

The quality of the urban environment would be improved because visitors would be able to use the new, safe, and aesthetically pleasing improved facilities. The proposed facilities would result in a long-term, minor, beneficial direct effect on the quality of the urban environment.

CONSULTATION AND COORDINATION

Coordination with the agencies with regard to this proposed project is ongoing. Letters will be sent to each agency and all comments will be addressed.

Agencies contacted for information or that will be given an opportunity to review and comment on this environmental assessment include the U.S. Environmental Protection Agency; U.S. Army Corps of Engineers; Georgia Department of Natural Resources; the Georgia State Historic Preservation Office; and the U.S. Fish and Wildlife Service. Native American Tribes who have expressed in interest in the proposed undertaking or who are affiliated with Chattahoochee River National Recreation Area will also be given an opportunity to review and comment on this proposed action.

In the fall of 2004, during the preparation of this environmental assessment, the park Superintendent met with the Georgia Department of Natural Resources staff including Bill Couch, manager of the fish stocking facility on the Chattahoochee River, regarding the proposed project. Meetings were also held with other stakeholders during this same period. Stakeholder issues and concerns regarding the proposed river access facility project were identified during these meetings.

LIST OF PREPARERS / CONSULTANTS

National Park Service - Consultants		
Kevin Cheri	Superintendent	National Park Service, Chattahoochee River NRA
David Ek	Chief of Science and Resource Management	National Park Service, Chattahoochee River NRA
John Marsh	Architect/Project Manager	National Park Service, Denver Service Center
Larry Vanhorn	Cultural Resources Specialist	National Park Service, Denver Service Center
Jane Sikoryak,	Cultural Resources Specialist	National Park Service, Denver Service Center
Elaine Rideout	Natural Resources Specialist	National Park Service, Denver Service Center
Preparers		
Steven Bach	Project Manager	Parsons
Bruce Snyder	Technical Director	Parsons
Angie Cook	Geologist	Parsons
Toya Campbell	Environmental Scientist	Parsons

REFERENCES

REFERENCES

CH2M Hill

- 1998 *Watershed Characteristic Task Plan: Gwinnett County Watershed Assessment and Modeling*. Draft. Atlanta.

Council on Environmental Quality, Executive Office of the President

- 1978 "Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act." *Code of Federal Regulations* Title 40, Parts 1500–1508. Washington, D.C.
- 1980 Council on Environmental Quality Memorandum of August 11, 1980: *Analysis of Impacts on Prime or Unique Agricultural Lands in Implementing the National Environmental Policy Act*. Available at <http://ceq.eh.doe.gov/nepa/regs/exec81180.html>.

Hess, T., A. Mauldin, and G. Walker

- 1981 *Evaluation of Some Important River Systems within the Walton District of the East Central Region: Middle Chattahoochee River Tributaries*. Atlanta: Georgia Department of Natural Resources, Game and Fish Division.

National Park Service, U.S. Department of the Interior

- 1989 *Chattahoochee River National Recreation Area, Georgia, General Management Plan, Development Concept Plan, and Environmental Assessment*.
- 2000b *Water Resources Management Plan, Chattahoochee River National Recreation Area*, prepared by Sam Kunkle, Department of Earth Resources, Colorado State University and David Vana-Miller, Water Resources Division, National Park Service, in Cooperation with the Chattahoochee River National Recreation Area, National Park Service – Department of the Interior. June 2000.
- 2001a *Management Policies 2001*. Washington, D.C.: National Park Service. NPS DI416.
- 2001b *Director's Order #12 and Handbook: Conservation Planning, Environmental Impact Analysis, and Decision Making*. Washington, D.C.
- 2002 "Provide River Recreation Access, Chattahoochee River National Recreation Area, Georgia." By Robert G. Ryan. Denver, Colorado: Denver Service Center.
- 2003 *Design Analysis, Provide River Recreation Access, Chattahoochee River National Recreation Area, Atlanta, Georgia*. December 22, 2003. Design Development Submittal.
- 2004a *Telephone conversation with Lawrence F. Van Horn, cultural resource specialist, Denver Service Center, National Park Service, and David Ek, Supervisory Resource Management Specialist, Chattahoochee River National Recreation Area*, January 20, 2004.
- 2004b "Trip Report on A Phase I Survey of Several Locations within the Chattahoochee River National Recreation Area, Georgia, May 3-7, 2004." By Jessica McNeil. Tallahassee, Florida: Southeast Archeological Center.
- 2004c *Procedural Manual 77-2: Floodplain Management. Policies and Guidance*. Obtained from the following Internet Web address: http://ww1.nature.nps.gov/rm77/pm77_2/procedures.htm.
- 2004d *Ecological Survey of Seven Proposed River Access Sites*. Prepared by Chattahoochee River National Recreation Area Division of Science and Resource Management. Prepared by Tim Davis, Biological Technician and Karen Afols, SCA Botany Intern.
- 2004e *Checklist of Reptile and Amphibians - Chattahoochee River National Recreation Area*, Southeast Coast Inventory and Monitoring Network Technical Report, 2004-04, Atlanta, GA

Parsons

- 2001 Fulton County-Johns Creek Water Resources Management Plan. Final. Fulton County, Georgia.

Post Buckley, Schuh and Jernigan, Inc.

Design drawings for proposed river access facilities, Chattahoochee River National Recreation Area.

Register & Associates, Inc.

- 2004 Section 404 Permitting, Settles Bridge Road, Chattahoochee River National Recreation Area, Gwinnett County, GA. October 12, 2004. Letter from Register & Associates, Inc., 3949 Jodeco Road, McDonough, GA. 30253.

Scalley, C.

- 2001 Personal communication with Chris Scalley, Director of the Chattahoochee Tailwater Environmental Foundation, Inc., April 25, 2001.

Trust for Public Land

- 2001 Personal communication with Kevin Johnson, Trust for Public Land, May 2001.

U.S. Army Corps of Engineers

- 1987 *Corps of Engineers Wetlands Delineation Manual*. Vicksburg, Mississippi: U.S. Army Engineer Waterways Experiment Station, Environmental Laboratory. Technical Report Y-87-1, NTIS No. AD A176912.

APPENDIX A
LIST OF VEGETATION OBSERVED DURING
THE NATIONAL PARK FIELD SURVEY
(NPS 2004d)

Boat Ramp Botany Inventory 2004 (Data collected by the National Park Service)

Common Name	Species	Johnson Ferry North	Jones Bridge	Paces Mill	Sandy Point	Settles Bridge	Whitewater
Overstory							
River Birch	<i>Betula nigra</i>	x	x	x	x	x	x
Water Oak	<i>Quercus nigra</i>	x	x	x	x	x	x
American Sycamore	<i>Platanus occidentalis</i>	x		x	x	x	x
Tulip Tree	<i>Liriodendron tulipifera</i>	x	x	x	x	x	x
Loblolly Pine	<i>Pinus taeda</i>	x	x		x	x	x
Sweetgum	<i>Liquidambar styraciflua</i>	x	x		x	x	x
Northern Catapla	<i>Catapla speciosa</i>	x					
Red Maple	<i>Acer rubrum</i>		x	x	x		
Black Walnut	<i>Juglans nigra</i>		x			x	
Green Ash	<i>Fraxinus pennsylvanica</i>			x			
Hickory	<i>Carya sp.</i>			x	x		x
Willow	<i>Salix sp.</i>				x		x
White Oak	<i>Quercus alba</i>				x	x	
Midstory							
Box Elder	<i>Acer negundo</i>	x			x	x	x
Black Cherry	<i>Prunus serotina</i>	x					
Smooth Sumac	<i>Rhus glabra</i>	x	x			x	
Dogwood	<i>Cornus florida</i>		x			x	
Big Leaf Magnolia	<i>Magnolia macrophylla</i>		x				
Spice Bush	<i>Lindera benzoin</i>		x			x	
Red Bud	<i>Cercis canadensis</i>		x		x	x	
Sassafras	<i>Sassafras albidum</i>		x		x	x	
Green Ash	<i>Fraxinus pennsylvanica</i>		x				
American Holly	<i>Ilex opaca</i>		x				
Maple Leaf Viburnum	<i>Viburnum acerifolium</i>		x				

Boat Ramp Botany Inventory 2004 (Data collected by the National Park Service)

Common Name	Species	Johnson Ferry North	Jones Bridge	Paces Mill	Sandy Point	Settles Bridge	Whitewater
Paw Paw	<i>Asimina triloba</i>				x		
Hawthorne	<i>Crataegus sp.</i>					x	
Carolina Silver Bells	<i>Halesia carolina</i>					x	
Herbaceous							
White Aster	<i>Aster sp.</i>	x	x	x	x		
Strawberry	<i>Fragaria virginiana</i>	x		x	x		x
Clover	<i>Trifolium sp.</i>	x		x			x
Blackberry	<i>Rubus sp.</i>	x		x	x	x	x
Posion Ivy	<i>Toxicodendron radicans</i>	x	x	x	x	x	x
Greenbriar	<i>Smilax sp.</i>	x	x	x	x	x	x
Muscadine Grape	<i>Vitis rotundifolia</i>	x	x	x	x	x	x
Virginia Creeper	<i>Parthenocissus quinquefolia</i>	x	x	x	x	x	x
Lespedeza	<i>Lespedeza sp.</i>	x		x			x
Juncus	<i>Juncus sp.</i>	x	x	x	x	x	x
Agriculture Grasses		x		x			
Trillium	<i>Trillium sp.</i>		x	x	x	x	x
Climbing Hydrangea	<i>Decumaria barbara</i>		x				
Wild Yam	<i>Dioscorea villosa</i>		x				
Violet	<i>Viola sp.</i>		x	x	x	x	x
Fern			x			x	
St. Johns Wort	<i>Hypericum punctatum</i>		x		x	x	
Hog Peanut	<i>Amphicarpa bracteata</i>		x				
False Solomon's Seal	<i>Smilacina racemosa</i>		x			x	
Wintergreen	<i>Chimaphila maculata</i>		x		x		
Green Dragon	<i>Arisaema dracontium</i>		x				
Trumpet Creeper	<i>Campsis radicans</i>			x		x	x

Boat Ramp Botany Inventory 2004 (Data collected by the National Park Service)

Common Name	Species	Johnson Ferry North	Jones Bridge	Paces Mill	Sandy Point	Settles Bridge	Whitewater
Dog Fennel	<i>Eupatorium capillifolium</i>			x			
River Cane	<i>Arundinaria gigatea</i>				x		x
Blueberry	<i>Vaccinium elliotii</i>				x		
Hearts a Bustin	<i>Euonymus americanus</i>				x		
Geranium	<i>Geranium sp.</i>				x		
Sedge	<i>Carex sp.</i>				x	x	
Periwinkle	<i>Vinca sp.</i>				x		
Spleenwort	<i>Asplenium sp.</i>					x	
Rattlesnake Plantain	<i>Goodyera repens</i>					x	
Potato Vine	<i>Solanum sp.</i>					x	
Foam Flower	<i>Tiarella wherreyi</i>					x	
Lyerleaf Sage	<i>Salvia lyrata</i>					x	
Solomon Seal	<i>Polygonatum biflorum</i>					x	
Cattail	<i>Typha sp.</i>					x	
Meadow Rue	<i>Thalictrum dioicum</i>						x
Yucca	<i>Yucca filamentosa</i>	x					
Exotic							
Russian Olive	<i>Elaeagnus umbellata</i>	x		x	x		x
Japanese Honeysuckle	<i>Lonicera japonica</i>	x	x	x	x	x	x
japanese Privet	<i>Ligustrum japonicum</i>	x	x	x	x	x	x
English Ivy	<i>Hedera helix</i>	x	x	x			
Japanese Silt Grass	<i>Microstegium vimineum</i>	x	x	x	x		x
Multiflora Rose	<i>Rosa multiflora</i>		x			x	
Ortamental Holly	<i>Ilex sp.</i>			x			
Mimosa	<i>Albizia julibrissin</i>				x		

**STATEMENT
OF
FINDINGS**

**STATEMENT OF FINDINGS
FOR
EXECUTIVE ORDER 11988 (“FLOODPLAIN MANAGEMENT”)**

**Construct River Access Facilities
Environmental Assessment
Chattahoochee River National Recreation Area
Atlanta, Georgia**



Recommended:

Superintendent, Chattahoochee River National Recreation Area

Date

Concurred:

Chief, Water Resources Division

Date

Concurred:

Southeast Region Safety Officer

Date

Approved:

Director, Southern Regional Office, National Park Service

Date

INTRODUCTION

Executive Order 11988 (“Floodplain Management”) requires the National Park Service and other agencies to evaluate the likely impacts of actions in floodplains. This statement of findings (SOF) has been prepared to comply with EO 11988. This Statement of Findings has been prepared in accordance with the outline presented in the National Park Service floodplain Procedural Manual 77-2: Floodplain Management (NPS 2004).

A. DESCRIPTION OF THE PROPOSED ACTION

The purpose of the proposed project is to improve resource conditions, prevent further resource degradation, and enhance visitor experience and safety at seven river access sites within the boundaries of the Chattahoochee River National Recreation Area, located in Atlanta, Georgia. This would be achieved by upgrading river access facilities at seven existing points along the river within the park. The proposed improvements would include paved boat or step-down ramps, retaining walls, and associated facilities such as connecting trails, boardwalks, crushed concrete parking lots, and access roads. The numbers and types of associated facilities would vary depending on the site, and would be located along the entire 48-mile length of the park. All seven of the proposed river access facilities would necessarily be located directly on the banks of the Chattahoochee River, within the 100-year floodplain.

A determination of the type of floodplain “action” is required in by the National Park Service for these types of projects. The type of action is defined in the National Park Service floodplain *Procedural Manual 77-2: Floodplain Management* (NPS 2004). A summary of this determination is required to be included in the Statement of Findings. The proposed action would constitute a “Class I Action”, as defined in the Procedural Manual:

“Class I Actions include location or construction of administrative, residential, warehouse, and maintenance buildings; non-excepted parking lots; or other man-made features which by their nature entice or require individuals to occupy the site, are prone to flood damage, or result in impacts to natural floodplain values. Class I Actions are subject to the floodplain policies and procedures if they lie within the 100-year floodplain (the Base Floodplain).”

“Class II Actions include any activity for which even a slight chance of flooding is too great. Class II Actions are subject to the floodplain policies and procedures if they lie within the 500-year floodplain. Examples of Class II Actions are the location or construction of”:

“Schools, hospitals, clinics, or other facilities occupied by people with physical or medical limitations”;

“Emergency services”;

“Fuel storage facilities, 40,000 gallons per day or larger sewage treatment plants, and storage of toxic or water-reactive materials, including hazardous materials”;

“Irreplaceable records, museums, and storage of archeological artifacts”.

“Class III Actions include Class I or Class II Actions in high hazard areas, which include coastal high hazard areas and areas subject to flash flooding. In high hazard areas, picnic facilities, scenic overlooks, foot trails, and associated day-time parking facilities may be placed within the 100-year floodplain, but these facilities must contain signs informing visitors of flood risk and suggested actions in the event of flooding. Consideration should be given to providing additional levels of flood protection. For other activities, Class III Actions are subject to the floodplain policies and procedures if they lie within the extreme floodplain.”

B. SITE DESCRIPTION

The following is a description of the specific facilities to be constructed at each of the seven locations:

Settles Bridge: A recycled crushed concrete parking area would be created within the sewer easement to provide the least impact to existing vegetation. The site would have an access trail from the parking lot to the river. The access trail would provide access to the proposed step-down ramp. The step-down ramp would be stabilized with rip-rap. The purpose of the trail would be to provide improved river access, mitigate impacts to the site caused by non-designated informal trails, and reduce contact with the potentially hazardous bridge structure.

The total construction footprint for the Settles Bridge site, including all areas that would require soil-disturbing activities, would be less than two acres, of which less than one acre would include forested habitat.

Abbotts Bridge: The existing boat ramp would be replaced, and the existing access road would be restored. The existing boat ramp and timber retaining walls would be replaced with a poured natural sandstone concrete ramp and wall. The ramp and retaining walls would be stabilized with rip-rap. The existing access road would be restored through an overlay of recycled crushed concrete.

The total construction footprint for the Abbots Bridge site, including all areas that would require soil-disturbing activities, would be less than one acre.

Jones Bridge: The existing boat ramp would be removed, and a new boat ramp would be constructed approximately 50 feet upstream. The ramp and retaining walls would be stabilized with rip-rap. The existing access road would be repaved. The existing boat ramp would be restored through use of fill and revegetation. The relocation of the boat ramp would provide additional parking spaces through the striping of the existing parking area.

A second previously existing boat ramp, located approximately ½ mile north of existing boat ramp and within the Jones Bridge “unit”, would be rehabilitated by filling in the old ramp access point with earth. No excavation would be conducted at this second site. The entire ramp would be filled with earth and revegetated.

The total construction footprint for the Jones Bridge site, including all areas that would require soil-disturbing activities, would be less than one acre.

Johnson Ferry North: A recycled crushed concrete parking area would be constructed between the existing dirt/gravel roadways east of the concession buildings. This area would be repaved with recycled crushed concrete to provide 27 parking spaces including spaces for handicap accessibility and trailer parking. The parking area would be accessed through extension of an existing dirt/gravel roadway and a new handicap accessible trail from the boat ramp river access area. The existing boat ramp would be replaced with a combination boat ramp and step down ramp. The ramp and retaining walls would be stabilized with rip-rap. The step down ramp would be located on the upstream side of the boat ramp with a rail installed to separate the boat ramp area from the step down ramp.

The total construction footprint for the Johnson Ferry North site, including all areas that would require soil-disturbing activities, would be less than one acre.

Sandy Point at Palisades: A trail and step-down ramp would be constructed at this site. The preferred location for the trail would be along an existing pedestrian footpath that provides direct access to the restroom facilities from the river access point. The step-down ramp installation is located within an area identified as highly eroded from pedestrian and boat launch use.

The total construction footprint for the Sandy Point site, including all areas that would require soil-disturbing activities, would be less than one acre.

Whitewater Creek at Palisades: Construction here would include a recycled crushed concrete paved trail head and parking lot, access trail, and step-down facility.

The total construction footprint for the Whitewater Creek site, including all areas that would require soil-disturbing activities, would be less than one acre.

Paces Mill: The existing boat ramp and retaining walls would be replaced with a poured natural sandstone concrete ramp and retaining walls. The ramp and retaining walls would be stabilized with rip-rap. A trail and viewing platform would be constructed next to the ramp, overlooking the river. A fence would be constructed 50 feet from the river.

The total construction footprint for the Paces Mill site, including all areas that would require soil-disturbing activities, would be less than one acre .

C CHARACTERIZATION OF FLOODPLAIN VALUES AND OF THE NATURE OF FLOODING AND ASSOCIATED FLOODPLAIN PROCESSES IN THE AREA

CHARACTERIZATION OF FLOODPLAIN VALUES

Floodplains (including associated wetland systems) have numerous values which are related to their various natural functions, including (Marble 1991; NPS 2000):

- Flood storage and retention
- Flood flow alteration
- Groundwater recharge

- Production/export
- Aquatic diversity/abundance
- Nutrient removal/transformation
- Sediment/toxicant retention
- Shoreline and soil stabilization/erosion control
- Habitat for a wide variety of wildlife

The above-listed functions provide value to human society in numerous ways. The values of the Chattahoochee River floodplain to man are derived from the various physical, chemical and biological functions that the floodplain system performs. To understand the values of the Chattahoochee River floodplain within the park, it is first necessary to define its key features. These are therefore presented first, and the associated values are then summarized.

General Floodplain Features

The surface water hydrology of the Chattahoochee River is largely determined by the geological setting and processes that have formed the watershed. The Chattahoochee River is located within the Piedmont Province, Southern Piedmont Section, Upland Georgia Subsection. The Chattahoochee River within the park flows along the Brevard Fault within the Gainesville Ridges District. This district is characterized by “a series of northeast-trending, low, linear, parallel ridges separated by narrow valleys...” (Clark and Zisa 1976, in NPS 2000). The ridge formations and Brevard Fault are the product of forces resulting from continental drift. The river flows along the Brevard fault line in a northeast to southwest direction.

Because of these geological features, the Chattahoochee River watershed is relatively long and narrow. It is the smallest river basin in the United States that provides potable water to a major metropolitan area (NPS 2000).

The portion of the Chattahoochee River watershed encompassed by the park drains 416 square miles below Buford Dam. The park extends from river mile 348.3 at Buford Dam to river mile 300.5 at Peachtree Creek. The major tributaries and watersheds associated with the park are shown in Table 1 (in sequence from north to south)(NPS 2000).

The majority of the tributaries to the river flow through urban or suburban areas subject to excessive amounts of nonpoint runoff caused by the surrounding urban areas. Numerous minor tributaries and many groundwater springs also drain to the Chattahoochee River within the park. None of the seven proposed river access sites would affect any of these large or smaller tributaries. All seven sites would be constructed directly on the main channel of the river.

Morgan Falls Dam is operated by the Georgia Power Company and was constructed in 1902-1904. The dam created Bull Sluice Lake, a shallow, sediment-filled lake. It is the only lake within the park. It is a run-of-the-river hydropower facility that has a minimal effect on flow and water levels in the river (NPS 1989).

Table 1
Watershed areas for each waterbody in the park

Waterbody	Watershed Area (Square Miles)
Haw Creek	3.8
Richland Creek	15.2
James Creek	10.6
Dick Creek	8.8
Table 1: Watershed areas for each waterbody in the park	
Waterbody	Watershed Area (Square Miles)
Suwanee Creek	51.2
Johns Creek	13.1
Unnamed Creek	3.7
Crooked Creek	9.2
Ball Mill Creek	3.5
Big Creek	103
Bull Sluice Lake	Not Applicable
Willed Creek	19.8
Morgan Falls Dam	Not Applicable
March Creek	5.3
Sope Creek	35.4
Long Island Creek	19.6
Rottenwood Creek	6.4
Peachtree Creek	131

Source: NPS 2000

Floodplain maps for all the units in the park except Settles Bridge were prepared by the park in 1999 (NPS 2000). Information from the Federal Emergency Management Agency (FEMA) was used to produce the floodplain maps for the park (an earlier USACE report is also available but has been replaced by the more recent FEMA maps)(USACE 1973). The maps are presented in the park's Water Resources Management Plan (NPS 2000) and were used in this Statement of Findings to define the overall features of the floodplains at each of the proposed river access sites. The map for the Settles Bridge floodplain is available at the FEMA web page (<http://www.fema.gov/>), and was also used for this Statement of Findings.

Within the total area of the park, the 100-year floodplain ranges approximately from 170 to 2,500 feet wide from the top of the channel bank to the edge of the 100-year floodplain edge (NPS 2000). The widths and ranges of widths of the floodplain within the 48-mile

park at each of the proposed river access sites are shown in Table 2, based on measurements taken from the 2000 National Park Service maps.

Table 2
Approximate width and range of width of the 100-year floodplain at each of the seven proposed river access sites (distance from top of bank to edge of floodplain on one side of the river).

Site	Width of 100-Year Floodplain at the Site (Feet)	Range of width of 100-Year Floodplain at the Site (Feet)
Settles Bridge	80	80-150
Abbotts Bridge	900	790-1,850
Jones Bridge	250	0-900
Johnson Ferry North	450	330-1,000
Sandy Point at Palisades	500	500-800
Whitewater Creek at Palisades	500	500-1,000
Paces Mill	100	50-100

Floodplain Values

Floodplains and associated wetlands play a critical role in maintaining the ecological, physical and chemical integrity of riverine systems. The functions and values of floodplains are therefore essential in protecting water resources and the natural environment, as discussed previously.

The floodplains along the Chattahoochee River and its tributaries are relatively narrow, given the basic geologic characteristics of the area, and do not provide for broad flood zones. The frequency and height of floodplain overflows have increased in the park as a result of urbanization and associated increases in impervious surfaces in the watershed. However, despite these features, the floodplain of the river within the park serves numerous valuable functions, especially flood control. The Georgia Rivercare 2000 Assessment (Miller et al. 1998) assigned a “significant” rating to the portion of the floodplain of the Chattahoochee River for the area within the park. This rating is largely based on the extent of wetlands within the floodplain, and the implied ability of wetlands to control flooding and protect water quality. A floodplain area containing from 0.5 % to 2% wetlands was assigned a “significant” rating.

Another key indicator of the ability of a floodplain to function effectively is the degree of cover by natural vegetation. Sites with greater amounts of natural vegetation provide a higher degree of flood control, and control of soil erosion, in addition to providing habitat for wildlife. Sites that are largely paved still provide valuable hydrological functions, but are of low value for wildlife. To provide a qualitative assessment of overall floodplain integrity at each of the seven proposed river access sites, a description of the degree to which the 100-year floodplain is covered by forested or other vegetation was therefore completed (Table 3).

Table 3
Degree to which the 100-year floodplain is covered by forested or other vegetation at each of the seven proposed river access sites, and the general integrity of the floodplain at each site (Based on qualitative observations during field surveys at each site in 2004).

Site	Degree to Which the 100-Year Floodplain is Covered By Forested or Other Vegetation	General Integrity of the Floodplain at Each Site
Settles Bridge	100% forest the in area affected by proposed trail and step-down ramp. 0% in area affected by proposed parking lot, located within pipeline right-of-way.	High integrity in wooded area, very low integrity in pipeline right-of-way, reflecting stable conditions in the wooded area and unstable conditions in the pipeline right-of-way. Overall integrity of the floodplain at this site was assigned a moderate value.
Abbotts Bridge	1% of the 100-year floodplain is forested along the edge of the river; the rest of the site consists of old field habitat.	Moderate integrity because the majority of the site consists of old field habitat. Moderate floodplain stability.
Jones Bridge	100% of the 100-year floodplain is forested except for existing parking lot and boat ramp.	Relatively high floodplain integrity because majority of the site is wooded. Relatively stable floodplain conditions.
Johnson Ferry North	90% of the 100-year floodplain consists of open grassed field (mowed), and 10% consists of forest habitat along the river.	Moderate floodplain integrity because the majority of the site is an open field. Moderate floodplain stability.
Sandy Point at Palisades	90% of the 100-year floodplain is wooded (forest), 10% disturbed paved or bare earth.	Relatively high floodplain integrity because majority of the site is wooded. Relatively stable floodplain conditions.

Table 3 (Continued)
Degree to which the 100-year floodplain is covered by forested or other vegetation at each of the seven proposed river access sites, and the general integrity of the floodplain at each site (Based on qualitative observations during field surveys at each site in 2004)(completed).

Site	Degree to Which the 100-Year Floodplain is Covered By Forested or Other Vegetation	General Integrity of the Floodplain at Each Site
Whitewater Creek at Palisades	90% of the 100-year floodplain is wooded (forest), 10% disturbed paved or bare earth.	Relatively high floodplain integrity because majority of the site is wooded. Relatively stable floodplain conditions.
Paces Mill	90% of the 100-year floodplain is wooded (forest), 10% disturbed paved or bare earth.	Relatively high floodplain integrity because majority of the site is wooded. Relatively stable floodplain conditions.

As can be seen in Table 3, forested sites, or sites that are associated with a larger surrounding forested area have a higher degree of overall floodplain integrity. Sites with old field habitat in the floodplain also provide some useful floodplain functions and values, including flood storage, floodflow alteration, and erosion control. Paved or disturbed sites have lower floodplain values but still provide flood storage capacity since no tall vertical structures are present.

NATURE OF FLOODING AND ASSOCIATED FLOODPLAIN PROCESSES IN THE AREA

The Chattahoochee River is free-flowing above Lake Lanier, but downstream of Lake Lanier, flooding patterns and associated floodplain processes are controlled largely by releases from Buford Dam. Stormwater runoff from urban and suburban areas is the second most influential factor affecting flooding and associated floodplain processes. The lake and dam are managed by the Mobile District, US Army Corps of Engineers to produce hydropower, protect downstream areas from flooding, maintain water quality, meet recreational needs, and protect aquatic life.

The effect of Morgan Falls Dam on park resources is comparatively unknown and is believed to be small in comparison to Buford Dam. Water passes through the shallow reservoir (known as Bull Sluice Lake) essentially unimpeded. The Johnson Ferry North, Sandy Point, Whitewater Creek, and Paces Mill river access sites are all located below Morgan Falls Dam. However, Morgan Falls Dam has a minimal effect on flooding at these locations. The Federal Energy Regulatory Commission is currently considering Georgia Power's relicensing of Morgan Falls Dam.

The river drops approximately 50 feet from Lake Lanier to Morgan Falls Dam (a total average gradient of 1.4 feet per mile)(USACE 1998). The average river gradient in shoals within the park is 12.5 feet per mile (USACE 1985). Shoals are relatively wide, shallow areas (up to 680 feet) and the substrate is primarily bedrock (USACE 1985). The gradient in runs (moderately wide areas up to 300 feet wide with shifting sand substrates) is approximately 2.0 feet per mile. The gradient in pools (narrow areas under 200 feet in width and characterized by silt substrates) is even lower (USACE 1985). All of these gradients are low in comparison with streams in the mountains north of the park. Current velocities within the park are therefore moderate during non-release periods. The channel of the river consists of a series of relatively quiet pools and riffles with slightly higher but still moderate current velocities. During hydropower releases, current velocities in the channel can be 4-5 feet per second (NPS 1989). Average current velocities in the river are much less.

The maximum daily average discharge from Buford Dam is 9,827 cubic feet per second (cfs)(USACE 1996). Average daily flow rates for the last ten years have been approximately 2,000 cfs (Comprehensive Survey). The Corps of Engineers is required to provide a minimum flow of 750 cfs at all times in the main channel of the river to protect aquatic life and water quality, and to allow for recreational uses.

Higher flows created during peak release periods create rapid and large (up to eight feet below the dam and at Settles Bridge) variations in water levels and current velocities immediately downstream of Buford dam (USACE 1985). Table 4 summarizes the water level changes that occur along the length of the park, all the way down to the Paces Mill site. Table 4 also provides an estimate of the water level changes expected at each of the proposed river access sites, based on interpolations from the US Army Corps of Engineers data for specified river miles presented in Table 4. Figure 1 illustrates the typical pattern of rapid changes in flow caused by hydropower releases for the US Geological Survey station at Norcross, Georgia, located approximately in the center of the park. Figure 2 illustrates historical water level (gage) data at the same station. Figure 3 illustrates water level changes just below Morgan Falls, farther south in the park (source for Figures 1, 2 and 3: USGS web page: <http://waterdata.usgs.gov/ga/nwis/>).

Changes in water levels caused by hydropower releases generally decrease downstream, but affect all of the proposed river access sites in varying degrees (Table 4). The surges have produced significant erosion of the riverbanks as far as 20 miles downstream, significant widening of the river, and an increase in the number of trees falling into the river (NPS 1989).

Flow in the main channel of the river is also affected significantly by storm events that contribute large amounts of water to the river via overland flow and from the free flowing major tributaries. Flows are generally the greatest in winter months (Couch, et. al 1996 in NPS 2000). These flows, combined with the effect of the hydropower releases, are the two main influences on the hydrology of the river, including flooding.

Table 4
Representative cross sections and stage changes in the Chattahoochee River below
Buford Dam, and estimated change in stage at the proposed River Access Sites.

(Source: US Army Corps of Engineers 1985)¹

Cross Section (River Mile)¹	Channel Type¹	Change in Stage (Feet) Between 1000 and 7500 cfs¹
346.74	Run	8.0
344.16	Run	5.8
328.62	Run	3.14
328.62	Shoal	3.14
320.72	Run	3.92
319.66	Shoal	2.97
305.55	Shoal	1.7
305.42	Pool	2.4
303.88	Run/Bar	5.3

Name of Proposed River Access Facilities:	Location of Proposed River Access Facilities (Approximate River Mile)	Estimated Change in Stage Between 1000 and 7500 CFS
Settles Bridge	~ 343.6	~ 8
Abbotts Bridge	~ 334.7	~ 3-5
Jones Bridge	~ 328.5	~ 3
Johnson Ferry North	~ 311	~ 1.7-3
Sandy Point at Palisades	~ 307.2	~ 1.7-3
Whitewater Creek at Palisades	~ 304.5	~ 2.4 (Pool) ~ 5.3 (Run/Bar)
Paces Mill	~ 303.5	~ 2.4 (Pool) ~ 5.3 (Run/Bar)

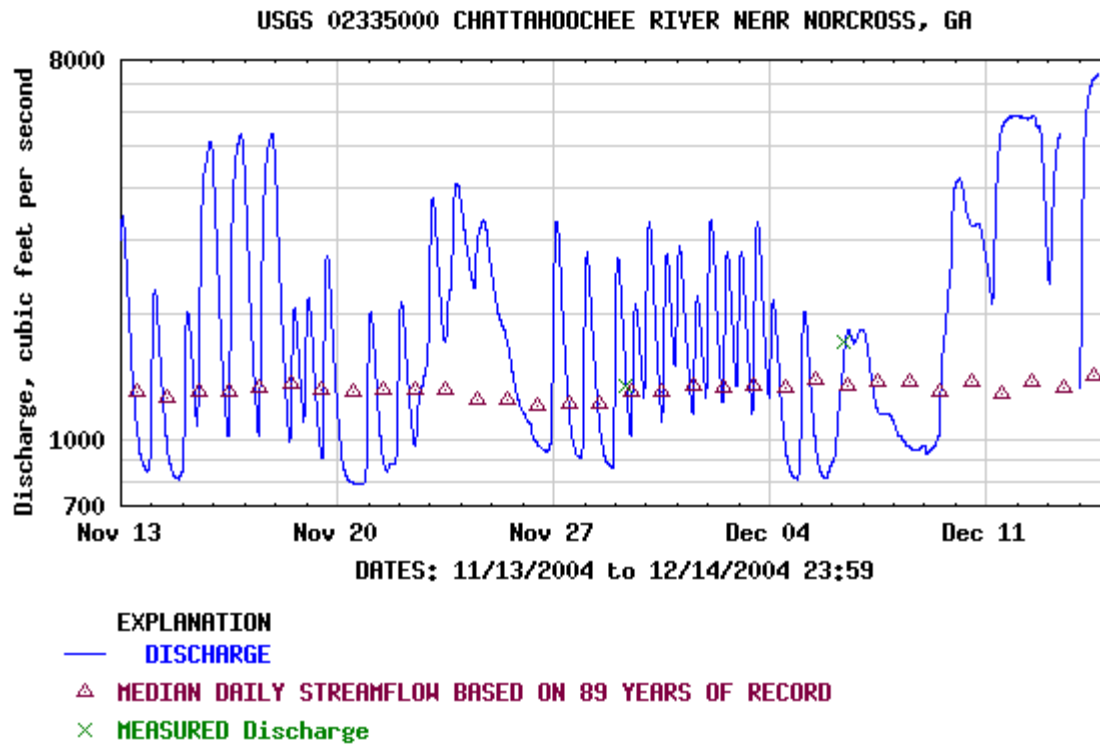


Figure I. Discharge in Chattahoochee River caused by hydropower releases from Buford Dam. Measured at USGS Station 02335000 near Norcross, Georgia, approximately in the center of the park
(source: USGS web page: <http://waterdata.usgs.gov/ga/nwis/>)

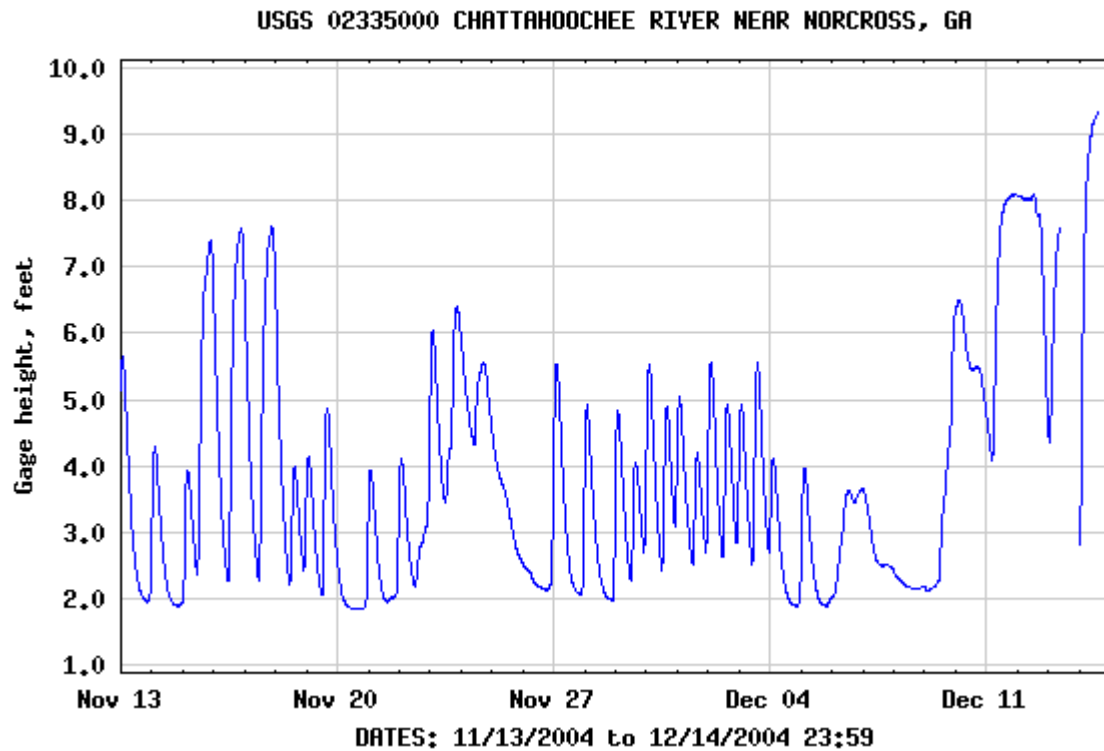


Figure 2. Gage height changes caused by hydropower releases from Buford Dam.
Measured at USGS Station 02335000 near Norcross, Georgia,
approximately in the center of the park
(source: USGS web page: <http://waterdata.usgs.gov/ga/nwis/>)

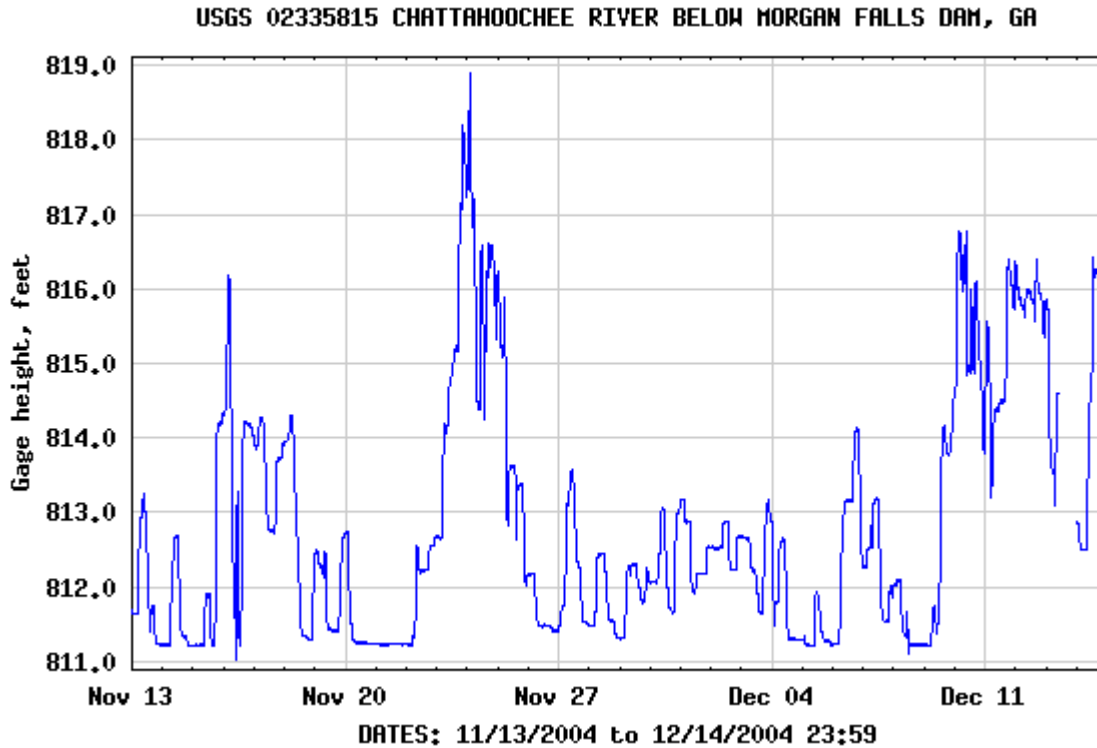


Figure 3. Gage height changes caused by hydropower releases from Buford Dam.
 Measured at USGS Station 02335815, just below
 Morgan Falls Dam, Georgia, farther south in the park
 (source: USGS web page: <http://waterdata.usgs.gov/ga/nwis/>)

Flooding can occur at any of the seven proposed river access sites because they are by necessity located directly on the main river channel and 100-year floodplain. Flooding characteristics at each site are also affected by the topography in relation to the river. The following is a summary of the main flooding characteristics at each site (please refer to Table 2 for approximate floodplain widths at each site):

Settles Bridge: The site is characterized by a very steep river bank (approximately 25 feet in height) and a narrow 100-year floodplain. The only portion of the proposed facility that would lie within the 100-year floodplain would include the step-down ramp and associated structures, and a portion of the trail. The parking lot would not be located in the 100-year floodplain.

Abbotts Bridge: The entire facility would be located in the 100-year floodplain, which is very wide at this point in the river. The topography is very flat.

Jones Bridge: The entire facility would be located in the 100-year floodplain, which is very wide at this point in the river. The topography is relatively flat.

Johnson Ferry North: The entire facility would be located in the 100-year floodplain, which is very wide at this point in the river. The topography is very flat.

Sandy Point at Palisades: The entire facility would be located in a narrow 100-year floodplain located at the bottom of a steep slope.

Whitewater Creek at Palisades: The entire facility would be located in a narrow 100-year floodplain located at the bottom of a steep slope.

Paces Mill: The entire facility would be located in a narrow 100-year floodplain located at the bottom of a steep slope.

No wetlands are located within the construction footprints of any of the proposed river access sites. The design of the Settles Bridge facility was changed to avoid impacting a 0.01 acre palustrine, emergent wetland. The Settles Bridge site and Jones Bridge sites do, however, support mesic hardwood floodplain forests that provide floodplain-related ecological and hydrological functions and values (e.g., flood water storage and retention, primary production, erosion control, water quality maintenance and wildlife).

JUSTIFICATION FOR USE OF THE FLOODPLAINS

A. DESCRIPTION OF WHY THE PROPOSED ACTION MUST BE LOCATED IN THE FLOODPLAIN

The proposed action consist of seven river access facilities, including boat and step-down ramps, ancillary facilities such as trails that connect to adjacent parking lots, and graveled or paved parking lots. Because these are water-oriented river access facilities, they are by necessity located as close to the river as possible, or actually in the river, and certainly, within the 100-year floodplain (except Settles Bridge, which has a portion of the facility located outside the 100-year floodplain).

The current facilities are deteriorating rapidly and do not provide the level of efficiency and safety that is required to meet the level of use by park visitors. The riverbanks around the existing facilities are also being degraded by overuse and need to be rehabilitated. The proposed facilities are needed to provide safe, efficient and environmentally compatible river access for visitors to the park.

B. INVESTIGATION OF ALTERNATIVE SITES

The preferred alternative is to improve facilities at seven existing points of access along the river. The seven sites for which improvements are proposed are existing locations where river access has been traditionally made available and used by park visitors, with the exception of Johnson Ferry, which has been closed to the public for the last several years. The improvement of river access facilities at these seven sites represents the preferred alternative. Because the sites are existing river access points that have been used for a long period of time, the preferred alternative would involve the least amount of environmental disturbance and would cost the least to upgrade.

Potential additional alternative sites within the new 10,000 acre park limits were considered in the early phases of the project but these were eliminated from further consideration because they were located in areas that were not owned by the National Park Service. The sites that were assessed were located in the vicinity of Highway 20 (two sites, one south and one north of Highway 20, Rogers Bridge, McGinnis Ferry, and

Cochran Shoals (Sibley Creek). These sites were not available for purchase and were therefore not assessed further.

DESCRIPTION OF SITE-SPECIFIC FLOOD RISK

A RECURRENCE INTERVAL OF FLOODING AT THE SITE

The recurrence interval is defined using the Weibul equation (USGS 1982) as follows:

$$R = (n+1)/m$$

Where R = Recurrence Interval
n= number of years of record, and
m=rank of each peak discharge

The annual exceedence probability, P_e , is the probability that a given discharge will occur in a given year. It is calculated as follows:

$$P_e = 1/R$$

The annual exceedence probabilities are typically presented for 2, 5, 10, 50 and 100 year intervals, and are, respectively, 50%, 20%, 10%, 2% and 1% (Table 5).

Data from the USGS web page (source:

http://waterdata.usgs.gov/ga/nwis/current/?type=flow&group_key=basin_cd) were used to calculate discharges for each of the typical recurrence intervals for each of the four USGS stations located in the approximate vicinity of the seven river access sites.

Discharges for each recurrence interval were taken from graphs of discharge versus recurrence intervals using the equation given above. The P_e values (probability of a given discharge to occur) are indicated in parentheses next to each recurrence interval in Table 5. An example graph is shown in Figure 4.

Figure 4. Peak Discharge (cfs) vs Recurrence Interval (R) for USGS Gage at US 41 and Chattahoochee River, Georgia (1972-1991).

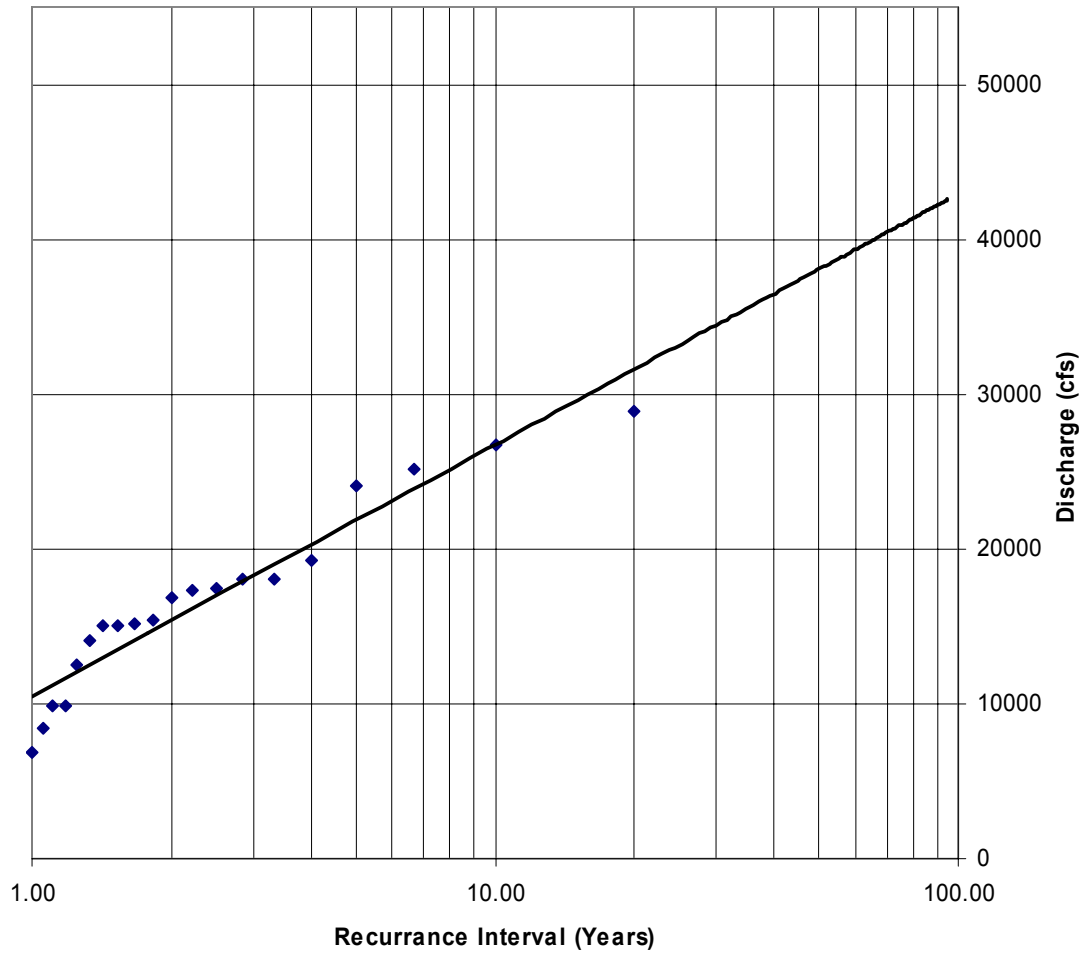


Table 5. Peak discharges (cfs) at given flood recurrence intervals at four USGS gage stations located in the vicinity of the seven proposed river access sites (source:

http://waterdata.usgs.gov/ga/nwis/current/?type=flow&group_key=basin_cd

USGS Station	Name	Nearest River Access Site	Peak Discharge (cfs) at Given Flood Recurrence Interval (and P _c)**				
			2 (50%)	5 (20%)	10 (10%)	50 (2%)	100 (1%)
02334430	CHATTAHOOCHEE RIVER AT BUFORD DAM, NEAR BUFORD, GA	Settles Bridge	10,300	11,000	11,300	13,000	13,500
02335000	CHATTAHOOCHEE RIVER NEAR NORCROSS, GA	Jones Bridge, Abbotts Bridge	9,430	10,500	11,000	13,200	14,400
02335815	CHATTAHOOCHEE RIVER BELOW MORGAN FALLS DAM, GA ****	Johnson Ferry	No data****	No data****	No data****	No data****	No data****
02335990	CHATTAHOOCHEE RIVER AT US 41, AT ATLANTA, GA ***	Sandy Point, Whitewater, Paces Mill	16,800	24,100	26,700	38,000	44,000

** Estimated visually from graph of discharge vs recurrence interval.

*** Derived from peak flows only – raw data not available on the Internet.

**** Two peak flows of 6,690 and 15,900 cfs was recorded at the Morgan Falls station.

The following additional information on flooding taken from the recent ACF Water Allocation EIS (USACE 1998) is also provided:

Six of the sites are located entirely within the 100-year floodplain of the Chattahoochee River. A portion of the Settles Bridge site is located within the 100-year floodplain. There is a 1-in-100 chance (1%) that a flood this size will happen during any year at any of the seven sites.

The effect of the dam on flow decreases as the distance from Buford Dam increases, but is still felt at the southern end of the park. This is a gradual change that is related to the volume of water released from the dam. The amount of water entering the river from nonpoint runoff also affects flooding patterns. Significant flooding can therefore occur at any point within the 48-mile park during unusually heavy rain events. Flooding and water level changes at each site are also related to natural features of the river, including river width, floodplain width, and slope.

Risks to humans/visitors can typically be mitigated by warnings and evacuation, because the topography at each site is relatively flat, with the exception of Settles Bridge. At Settles Bridge, an elevated trail would provide park visitors with an improved and safer means of escaping floods from natural causes and/or rapidly rising water associated with hydropower releases.

Hydropower releases result in water level increases up to 8 feet above average immediately below the dam (Table 4). As the distance downstream increases, the height of this water level change generally decreases (Table 4). Water level changes at each of the seven proposed river access facility sites during hydropower releases are also shown in Table 4, based on interpolation from the

data for stage changes at each river mile. Water level changes range from approximately 1.7 feet at Sandy Point to 8 feet at Settles Bridge. Interestingly, a range of water level changes of 2.4-5.3 feet can also occur farther downriver at the Paces Mill sites as a result of dam releases. This is not intuitively obvious because this site is the southernmost site. Higher water level changes at this site are related to the fact that the river is narrower at this location.

B. HYDRAULICS OF FLOODING AT THE SITE (DEPTHS, VELOCITIES)

Depth of Flooding

Depth of flooding at each site was estimated by subtracting the maximum observed water level (stage) at four USGS stations in the park from the average water level, for the period of record at each gage. Water levels (stages) were determined from USGS data at the following website: <http://waterdata.usgs.gov/ga/nwis/>. Data for only four USGS stations were used for this assessment, based on their location relative to the proposed river access facility sites, and whether the stations were in creeks or the mainstem of the river (creek stations were not used). Table 6 summarizes the results of this analysis. The following is a set of conclusions that can be made based on this information:

Average water discharge at the Buford Dam USGS gage was 1,616 cfs (0.95 foot gage height) for the recording period. The range of peak flow gage readings at this station was 7.05-5.09 feet (the range is reversed because of a poor correlation between gage reading and gage height at this station, possibly due to the proximity to Buford Dam). The difference between the ranges of peak flow gage heights and gage levels was 6.1-4.14 feet. This can be used as an indicator of the approximate maximum flood water level change to be expected at the Settles Bridge river access facility site just downstream of Buford Dam.

Average water discharge at the Norcross USGS gage was 2,164 cfs (3.5 foot gage height) for the recording period. The range of peak flow gage readings at this station was 9.07-13.1 feet. The difference between the ranges of peak flow gage heights and gage levels was 5.6-9.6 feet. This can be used as an indicator of the approximate maximum flood water level change to be expected at the Jones Bridge and Abbotts Bridge sites.

Average water discharge at the USGS gage below Morgan Falls Dam was 1,807 cfs (811.7 foot gage height) for the recording period. The range of peak flow gage readings at this station was 817.7-820.93 feet (only two peak flow readings were available). The difference between the ranges of peak flow gage heights and gage levels was 6.0-9.2 feet. This can be used as an indicator of the approximate maximum flood water level change to be expected at the Johnson Ferry site.

Table 6

Indicator of maximum possible water levels during flooding, based on historic water level data from four stations in the Chattahoochee River in the vicinity of the proposed river access facilities. Estimates of water level changes based on difference between average and peak water levels, using relative gage height data.¹

USGS Gage No.	USGS Gage Name	Closest River Access Site	Range of Observed Peak Flows for Period of Record (cfs)	Maximum Gage Heights Observed for Period of Peak Flow Record (cfs)	Average Gage Height During Non-Peak Flow Recording Period (Feet)	Average Streamflow Based on Non-Peak Flow Period of Record (cfs)	Difference Between Ranges of Maximum Peak Flows and Average Non-Peak Flow Gage Levels (Feet)
02334430	Chattahoochee River at Buford Dam, Near Buford, GA	Settles Bridge	8,760-12,100	7.05-5.09 (not a good correlation at this station)	0.95	1,616 (Period: 1957-2001)	6.1-4.14
02335000	Chattahoochee River Near Norcross, GA	Jones Bridge, Abbotts Bridge	5,960-13,200	9.07-13.1	3.5	2,164 (Period: 1957-2004)	5.6-9.6
02335815	Chattahoochee River Below Morgan Falls Dam, GA	Johnson Ferry	6,960-15,900 (Only two records)	817.7-820.93 (Only two records)	811.7	1,807 (Period: 1989-2004)	6.0-9.2
02335990	Chattahoochee River at Us 41, Atlanta, GA	Sandy Point, Whitewater, Paces Mill	15,000-17,500	768.57-764.14	766.7	16,703 (Period: 1972-2001)	1.9-2.6

¹ Source of information: USGS 2004 – <http://nwis.waterdata.usgs.gov/ga/nwis/>

Average water discharge at the USGS gage at US 41 was 16,703cfs (766.7 gage height) for the recording period. The range of peak flow gage readings at this station was 768.57-764.14 feet. The difference between the ranges of peak flow gage heights and gage levels was 1.9-2.6 feet. This can be used as an indicator of the approximate maximum flood water level change to be expected at the Sandy Point, Whitewater, and Paces Mill sites.

Current Velocity During Flooding

Current velocities in channel runs under the normal range of flow can be as high as 4-5 feet per second (NPS 1989). Channel velocities during flooding would be expected to be higher. Velocities associated with overbank flooding would be much lower, however, because the water would be spreading out over a wide area. No actual data on current speeds of water in areas affected by overbank flooding are available, however. Therefore, a qualitative estimate is provided in this Statement of Findings.

C. TIME REQUIRED FOR FLOODING TO OCCUR (AMOUNT OF WARNING TIME POSSIBLE)

There are two types of flooding that relate to safety issues at the seven proposed river access sites: (1) rapid water level changes caused by the periodic releases associated with hydropower generation; and (2) flooding caused by stormwater runoff during major rain events. The time required for flooding is related to the mix of these two factors.

An assessment of the time required for flooding caused by water level changes related to releases from Buford Dam was obtained from the following web page (<http://www.atlantafllyfishingclub.org/hoochflows.htm>) and is presented in Table 7.

Table 7 Approximate time in hours for water release crest to reach various locations downstream from Buford Dam.			
Location	Miles Downstream	Approximate Hours to Crest	Approximate Hours for Water to Completely Recede
Highway 20 Bridge	2.5 Miles	45 Minutes	1-1/2 Hours
Settles Bridge	5 Miles	1.5 Hours	3 Hours
McGinnis Ferry Bridge	8.5 Miles	3 Hours	6 Hours
Suwanee Creek	10 Miles	3.5 Hours	7 Hours
Rogers Bridge	11 Miles	3.75 Hours	7-1/4 Hours
Abbotts Bridge, GA 120	13 Miles	4.5 Hours	8 Hours
McClure Bridge	14 Miles	5 Hours	10 Hours
Medlock Bridge, GA 141	17 Miles	6 Hours	13 Hours
Jones Bridge	19 Miles	6.5 Hours	14 Hours
Holcomb Bridge	23 Miles	8 Hours	16 Hours

<p align="center">Table 7 (Continued) Approximate time in hours for water release crest to reach various locations downstream from Buford Dam (completed).</p>			
Location	Miles Downstream	Approximate Hours to Crest	Approximate Hours for Water to Completely Recede
Island Ford	29 Miles	10 Hours	20 Hours
Roswell Rd., U.S. 19	31 Miles	10.5 Hours	21 Hours
Morgan Falls	35 Miles	11.5 Hours	-----

There is a considerable safety hazard for visitors in the river at Settles Bridge and Jones Bridge sites because of the rapid and relatively large change in water levels during hydropower releases. This effect is reduced farther downstream.

During large floods that mask the hydropower releases from Buford Dam, all of the seven proposed river access facilities would probably be inundated completely. Large rain events can also cause river levels to rise very rapidly because of the large amount of impervious surfaces in the watershed caused by development. An example of a high water event in December 2004 is provided in Figure 5.

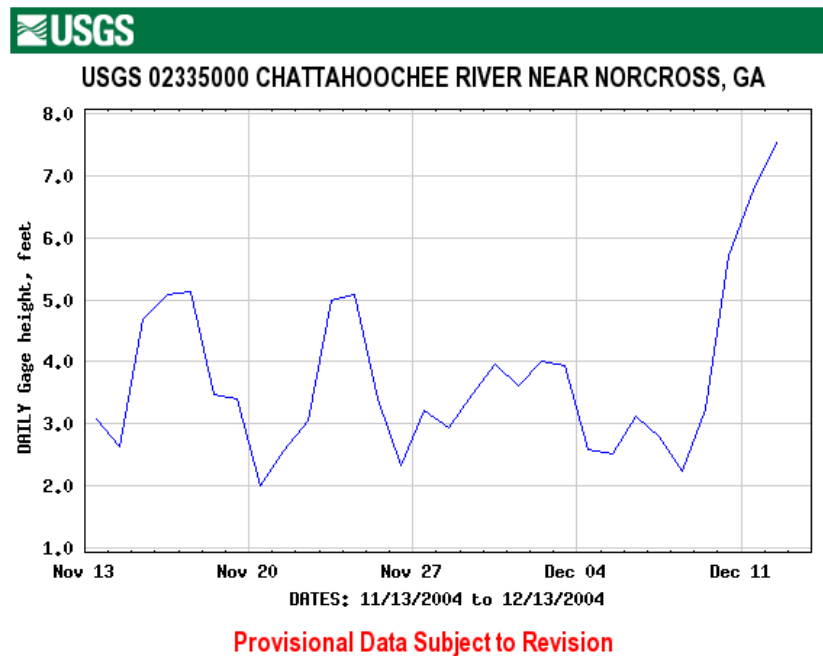


Figure 5. Discharge vs time for USGS gage 02335000 from
November 13 to December 11, 2004
(source: USGS web page: <http://waterdata.usgs.gov/ga/nwis/>).

In this event, gage levels increased from approximately 2.2 feet to a little less than 8 feet in two days. This degree of change in water levels could occur at any of the seven proposed river access facility sites, depending on the magnitude of the storm event.

D. OPPORTUNITY FOR EVACUATION OF SITE IN THE EVENT OF FLOODING

Each river access site is connected to adjacent upland areas by trails and access roads. Floodplain widths range from a minimum of about 80 feet at Settles Bridge to a maximum of about 2,500 feet at site Abbotts Bridge. Except for Settles Bridge, the floodplain is relative wide and visitors can easily evacuate themselves during floods or as water levels rise. The biggest safety hazard is created during releases from the dam when visitors wade into shallow riffle areas along the river (such as at Settles Bridge or Jones Bridge) and the water levels rise. This has happened at various places along the river in the past, and numerous rescues have been made (NPS, personal communication). During floods that are dominated by natural rain events, the river is still dangerous for visitors because relatively rapid rises in water levels can occur in a short time frame (Figure 5).

Evacuation routes from each site would be readily available. As a safeguard, however, signs would be posted at all seven sites warning visitors of potentially rapid changes in water levels. The ability of visitors to evacuate the facilities during floods would be improved as a result of construction and operation of the improved, more efficient facilities. Visitors would also be able to remove boats from the water or move away from the river rapidly if required to do so.

E. GEOMORPHIC CONSIDERATIONS (EROSION, SEDIMENT DEPOSITION, CHANNEL ADJUSTMENTS)

Each of the seven sites is located directly on the banks of the Chattahoochee River. Each site therefore would connect directly to the river from the upland side, via a boat ramp or step-down ramp. During construction, the proposed sites would be especially prone to erosion as a result of this factor. Cofferdams would therefore be placed at five of the sites to control erosion during construction. Other best management practices such as filter pads, silt fences, and immediate reseeding would also be employed to control erosion over the short-term construction period.

During operation of the proposed facilities, the constructed ramps, retaining walls, trails, and rehabilitated river banks areas would help minimize erosion from the sites, in comparison to the existing deteriorating facilities. In addition to the standard best management practices, the riverbank on either side of the facilities would be rehabilitated with natural vegetation. During operation, the proposed structures and revegetated shoreline areas therefore would stabilize the river bank, thereby reducing the potential for sediment deposition.

The projects would all be located along the main channel of the Chattahoochee River, and would have only minor localized effects on current patterns in the vicinity of each structure. Therefore, no channel adjustments would result from project implementation.

DESCRIPTION AND EXPLANATION OF FLOOD MITIGATION PLANS

A. MEASURES TO REDUCE HAZARDS TO HUMAN LIFE AND PROPERTY, WHILE MINIMIZING IMPACTS ON NATURAL RESOURCES

The lower ramp portions of the projects would be located below the mean high water level of the Chattahoochee River and are designed to withstand aquatic conditions (i.e., rip rap and general design features for this type of water-related project). Other river structures located upgradient of the ramps include retaining walls, trails (made from recycled materials), and paved or crushed gravel parking areas. These elevated structures would be flooded much less frequently but have been designed to withstand periodic flooding.

Signs would be placed at all seven sites to notify the public about the periodic releases from Lake Lanier, and the potential safety hazards resulting from rapidly changing water levels.

The facilities have been designed to minimize effects on river flow. In addition, stabilization of the existing deteriorated river bank areas at each site will result in a reduction in soils erosion. Over the long-term, the stabilization of the sites with new ramp, retaining walls, trails and boardwalks, would also help minimize soil erosion.

B. COMPLIANCE

The structures and facilities associated with the proposed river access facility have been designed to meet the requirements of the National Flood Insurance Program (44 CFR Part 60).

The project would require a Section 404 Clean Water Act permit for placement of fill (rip rap, retaining walls and paved ramps) in waters of the United States. No wetlands would be filled. The National Park Service would coordinate with the US Army Corps of Engineers, Savannah District Northern Office on the Section 404 permit.

The project would also require a Metropolitan River Protection Act permit from the Atlanta Regional Commission. This would assure full compliance with all local floodplain regulations and requirements. These are generally focused on erosion control during construction and operation.

A State of Georgia Land Disturbing permit would also be required for this project. This permit would assure that the project meets all the state requirements for construction.

The Environmental Assessment would serve as a technical supporting document for compliance coordination for the project.

SUMMARY

The proposed project must be constructed within the 100-year floodplain by necessity because it is a river access facility project. The river will eventually flood some or all of the sites, depending on the magnitude of the flood event. This is inevitable in the case of river access facilities.

The preferred alternative would substantially avoid and reduce potentially hazardous conditions associated with flooding by using facility designs and locations that minimize effects of existing channel flood flows and resulting damage to structures. The proposed facilities to be constructed or upgraded in the floodplain are designed to be submerged and to withstand the flow velocities that would be associated with flood conditions both within and outside of the main river channel.

The existing facilities are deteriorating and have caused local erosion and habitat disturbance in adjoining natural areas associated with visitor overuse. The proposed project would provide park visitors with improved river access and would minimize further resource degradation that has occurred at the existing access points. This would result in a localized improvement in floodplain values.

The National Park Service concludes that the preferred alternative would not have adverse effects on floodplain functions and values within the park. The structures would help to reduce local soil erosion and provide more efficient and safe river access. The facilities are needed to accommodate the heavy use that the park currently experiences and expects to experience in the future. Mitigation and compliance with regulations and policies to prevent impacts to water quality, floodplain values, and loss of property or human life would be strictly adhered to during and after the construction upgrades. Permits with other federal and cooperating state and local agencies would be obtained prior to starting construction activities. No long-term adverse effects would occur from the preferred alternative. Therefore, the National Park Service finds the preferred alternative to be acceptable under Executive Order 11988 for the protection of floodplains.

REFERENCES

Marble, A. D.

1991 *A Guide to Wetland Functional Design*. Lewsi Publishers. 222 pp.

Miller, Z., J. McCollum, L.C. Barrett, H. Reheis, and A. Hallum

1998 *Georgia Rivers: An Initial Assessment*. Atlanta.
http://www.state.ga.us/dnr/enviro/gaenviro_files/watrqual_files/rc2000.htm.

National Park Service

2004 *Procedural Manual 77-2: Floodplain Management*. Policies and Guidance. Obtained from the following Internet Web address:
http://www.nature.nps.gov/rm77/pm77_2/procedures.htm.

2003 *Chattahoochee River National Recreation Area Draft General Management Plan/Environmental Impact Statement*. Released XXXX, 2003

2000 *Water Resources Management Plan, Chattahoochee River National Recreation Area*, by Sam Kunkle, and David Vana-Miller. NPS D-48.

1989 *Chattahoochee River National Recreation Area Draft General Management Plan/Development Concept Plan/Environmental Assessment*. July 1989

US Army Corps of Engineers, Mobile District

- 1998 *Draft Environmental Impact Statement, Water Allocation for the Apalachicola-Chattahoochee-Flint River Basin (ACF), Alabama, Florida, and Georgia.* September 1998.
- 1996 *Environmental Assessment for Major Rehabilitation Evaluation Report, Buford Dam, Chattahoochee River, Buford, Gwinnett County, Georgia. Appendix C.* Prepared by Mobile District, US Army Corps of Engineers, Mobile, AL. March 1996.
- 1985 *Effects of Flow Alterations on Trout, Angling, and recreation in the Chattahoochee River between Buford Dam and Peachtree Creek.* Prepared by US Army Engineer Waterways Experiment Station, Vicksburg, MS. March, 1985.
- 1973 *Flood Plain Information. Buford Dam to Whitesburg, Georgia.* Prepared by Mobile District, US Army Corps of Engineers. November, 1973.

US Geological Survey

- 1982 *U.S. Geological Survey 1982. Guidelines for Determining Flood Flow Frequencies, Bulletin 17B, Interagency Advisory Committee on Water Data, Hydrology Subcommittee, U.S. Geological Survey, Office of Water Data Coordination.*



As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

NPS D-60 January 2005 Printed on recycled paper.